

1 Knudson - Highly Confidential - Trade Secret

2 A F T E R N O O N S E S S I O N

3 1:36 p.m.

4

5 THE VIDEO OPERATOR: This is
6 videotape number 2, the continuation of the
7 deposition of Mr. Knudson. Today is July 12th,
8 1995. The time on the screen is 1:36:36. You're
9 on the record.

10 D A V I D K N U D S O N,
11 resumed, having been previously duly sworn, was
12 examined and testified further as follows:

13 CONTINUED EXAMINATION

01:27:06 14 BY MR. ROGERS:

01:36:42 15 Q. Mr. Knudson, we broke at a time when
01:36:46 16 we were talking about what's been marked as
01:36:50 17 Knudson Exhibit 2. If I could ask you just to
01:36:50 18 refer back to that document.

01:36:52 19 A. Sure.

01:36:58 20 Q. And specifically, if I could direct
01:37:00 21 your attention to a page number, and I'm going to
01:37:04 22 go according to the Bates stamp that begins PA,
01:37:08 23 so if you'll turn to PA 494527, please.

01:37:08 24 (Witness complies.)

:37:16 25 A. Okay.

2058451990

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01:37:20 2 Q. And I had asked you just before the
01:37:24 3 break what you understood the term "size prep" to
01:37:26 4 mean. Do you see the reference to size prep at
01:37:28 5 the top of the page?

01:37:28 6 A. Yes, I do.

01:37:30 7 Q. And then five or six lines down,
01:37:34 8 still in that first or left hand column, you'll
01:37:38 9 see "DNCEL liquor." And we spoke earlier about
01:37:42 10 what you understood DNCEL to stand for.

01:37:48 11 The eighth line underneath DNCEL
01:37:54 12 liquor says, "Nicotine level." Does that
:37:56 13 reference to nicotine level on a document
01:38:00 14 describing potential quality measurements refresh
01:38:04 15 your recollection as to whether nicotine is
01:38:06 16 tested at any point in the RL process?

01:38:08 17 MR. MURPHY: I object to the form of
01:38:10 18 the question. The witness has testified he
01:38:14 19 hasn't seen this document before. What precisely
01:38:18 20 are you asking him about an entry on a document
01:38:18 21 that he hasn't seen before?

01:38:20 22 MR. ROGERS: I'm simply asking,
01:38:22 23 having looked at this entry this afternoon,
01:38:26 24 whether that refreshes his recollection as to
:38:28 25 whether or not nicotine is ever tested at any

2058451991

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1 Knudson - Highly Confidential - Trade Secret
01:38:30 2 stage in the RL process. I'm not asking him to
01:38:34 3 authenticate this particular document. I'm
01:38:36 4 simply asking whether it refreshes his
01:38:36 5 recollection.

01:38:38 6 MR. MURPHY: I object to the form.
01:38:38 7 You can answer the question.

01:38:42 8 A. It doesn't do anything to refresh my
01:38:42 9 recollection.

01:38:48 10 Q. Do you know when Philip Morris first
01:38:54 11 started producing reconstituted tobacco?

01:39:02 12 A. I can't put an exact date on it.
:39:06 13 When I came with the company in 1973, the BL
01:39:10 14 process was already in existence to produce
01:39:16 15 reconstituted tobacco. It is my impression that
01:39:20 16 had been in existence in some form or another for
01:39:22 17 some period of years.

01:39:28 18 Q. Did you participate in any way in the
01:39:34 19 development of processes for the Park 500 plant,
01:39:36 20 which was shortly after your arrival at Philip
01:39:36 21 Morris?

01:39:44 22 A. No, I did not.

01:39:44 23 Q. Do you know why Philip Morris uses
01:39:44 24 reconstituted tobacco in its cigarettes?

:39:50 25 A. It is my understanding that the

2058451992

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01:39:56 2 purpose for reconstituted tobacco is to optimize
01:40:04 3 the utilization of the tobacco purchases made by
01:40:06 4 Philip Morris.

01:40:14 5 Q. I take it from your answer, and
01:40:16 6 correct me if I'm wrong, that your description
01:40:22 7 speaks to the economic advantages of the
01:40:24 8 reconstituted process.

01:40:24 9 MR. MURPHY: I object to the form of
01:40:28 10 the question. I think the question is inartful.
01:40:30 11 If you could be more clear, I think that might be
01:40:32 12 helpful.

:40:40 13 Q. What did you mean, Mr. Knudson, by
01:40:42 14 the answer, "to optimize the utilization of
01:40:46 15 tobacco purchases made by Philip Morris"?

01:40:56 16 A. When Philip Morris purchases tobacco,
01:41:04 17 what they acquire is a leaf product or a
01:41:08 18 subsequently processed product which consists of
01:41:12 19 the leaf, or as it's sometimes referred to,
01:41:16 20 lamina portion of the leaf, as well as the stem
01:41:20 21 material that came along with that.

01:41:28 22 In the processing of the -- going all
01:41:34 23 the way back to the leaf, in the processing, the
01:41:36 24 separation of the stem from the lamina material
:41:42 25 and subsequent processing, there are portions of

2058451993

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01:41:48 2 that that are potentially unusable because of
01:41:50 3 their shape, size, or form.

01:41:52 4 And the reconstituted process allows
01:41:56 5 an opportunity to improve on the utilization of
01:41:58 6 at least some of those materials.

01:42:02 7 Q. Are there any other reasons, other
01:42:04 8 than the utilization of those materials, that
01:42:06 9 Philip Morris manufactures reconstituted
01:42:06 10 tobacco?

01:42:08 11 A. Not to the best of my knowledge.

01:42:42 12 Q. I'm not going to mark this as an
01:42:44 13 exhibit. It's been marked as an exhibit before.
01:42:46 14 I'll simply represent to you, Mr. Knudson, that
01:42:48 15 I'm handing you what's been marked Burnley
01:42:58 16 Exhibit 32, which is a rather lengthy document,
01:43:00 17 on the front page of which it says, "The RL
01:43:02 18 process overview."

01:43:04 19 This particular version I'm giving
01:43:06 20 you doesn't have the stamp of the Burnley exhibit
01:43:08 21 number. I'll simply represent to you and counsel
01:43:14 22 that it's a duplicate of that exhibit. And just
01:43:18 23 to repeat the Bates stamp number, it's PA 211404
01:43:24 24 to PA 211712, corresponding Philip Morris
01:43:30 25 production numbers 2030363637 through

2058451994

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01:43:36 2 2030363945.

01:43:38 3 Have you ever seen this document
01:43:40 4 before, Mr. Knudson?

01:43:42 5 A. Not to my knowledge.

01:43:46 6 Q. Have you ever heard of this document
01:43:46 7 before?

01:44:00 8 A. I don't know that I've heard of this
01:44:06 9 document. The fact that I have probably heard
01:44:06 10 reference from time to time over the years to
01:44:12 11 documents that might be generated as an overview
01:44:16 12 sort of description of any process wouldn't be
01:44:18 13 unusual.

01:44:20 14 So there may have been a document
01:44:22 15 generated at some point in time that was called
01:44:28 16 an RL process overview, of which this may be in
01:44:30 17 part a reflection of some of that kind of
01:44:34 18 documentation. But I'm not familiar with this
01:44:38 19 document as it stands before me today. I don't
01:44:42 20 remember ever seeing anything of quite this
01:44:44 21 volume.

01:44:54 22 Q. Would you ever have reason to refer
01:44:58 23 to overview documents, the types of overview
01:45:00 24 documents that you've described, for various
01:45:02 25 processes?

2058451995

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01:45:04 2 MR. MURPHY: I object to the form of
01:45:06 3 the question. I think it slightly misstates his
01:45:06 4 prior testimony. But you can answer the
01:45:08 5 question.

01:45:10 6 A. Could you restate the question for
01:45:10 7 me?

01:45:14 8 Q. Sure. Have you ever had reason to
01:45:18 9 consult or review overview documents for any
01:45:20 10 Philip Morris process?

01:45:26 11 A. The -- I can't remember as an exact
01:45:32 12 fact. However, in moving from job responsibility
:45:36 13 to job responsibility, I probably would have had
01:45:38 14 the opportunity and may have in fact taken
01:45:42 15 advantage of the opportunity to review documents
01:45:46 16 which would give me a general understanding of
01:45:48 17 certain processes that I might be expected to
01:45:48 18 have some general knowledge of.

01:45:52 19 Whether they were called overview
01:45:52 20 documents, I can't recall.

01:45:58 21 Q. Do you know of any other document
01:46:00 22 describing any process that is called a blank
01:46:04 23 process overview? And you can substitute RL ^{for} ~~or~~
01:46:06 24 anything else.

:46:06 25 MR. MURPHY: I object to the form of

2058451996

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01:46:08 2 the question. You can answer the question.

01:46:12 3 A. Again, I think the potential is that
01:46:16 4 there could well be documents that describe any
01:46:18 5 number of Philip Morris processes that at some
01:46:22 6 point in time might have been either described
01:46:30 7 verbally or in fact titled "overview documents."

01:46:30 8 I don't have an accurate recollection
01:46:34 9 of what any of those might or might not have
01:46:34 10 been.

01:46:36 11 Q. For instance, do you have any
01:46:40 12 knowledge whether there's a document entitled "BL
:46:44 13 process overview"?

01:46:48 14 A. I don't have any recollection that I
01:46:50 15 could say with any surety that such a document
01:46:52 16 exists.

01:46:56 17 Q. Was there a process overview for
01:46:58 18 Bermuda Hundred while you were the plant
01:46:58 19 manager?

01:47:00 20 A. I'm sure there was a document that
01:47:10 21 represented some form of a synopsis of what the
01:47:12 22 process was all about. I don't know if it was
01:47:14 23 called an overview document. It would be a
01:47:16 24 fairly normal term to apply to that kind of a
:47:18 25 document.

2058451997

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01:47:18 2 Q. When you say "I'm sure there was a
01:47:22 3 document," is there any document that you're
01:47:24 4 thinking of in particular that would fit within
01:47:26 5 this description?

01:47:30 6 A. No. I'm just saying in general
01:47:32 7 principle, I'm sure that such a document could
01:47:32 8 well have existed.

01:47:46 9 Q. Was there a training manual for the
01:47:50 10 Bermuda Hundred plant while you were the plant
01:47:50 11 manager?

01:47:54 12 MR. MURPHY: I object to the form of
:47:56 13 the question. By "training manual," do you mean
01:48:00 14 a training manual for plant employees?

01:48:02 15 MR. ROGERS: Yes. That's fair.

01:48:04 16 A. I believe there were multiple
01:48:06 17 training manuals.

01:48:14 18 Q. When you were promoted from your
01:48:18 19 position as plant manager of Bermuda Hundred, did
01:48:20 20 you bring any files with you to your next
01:48:22 21 position from Bermuda Hundred?

01:48:26 22 A. No. When I left Bermuda Hundred I
01:48:30 23 was moving into an entirely different area of
01:48:32 24 responsibility, and all my files were left with
:48:36 25 the facility and with succeeding facility

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01:48:36 2 management.

01:48:40 3 Q. Do you know where those files are
01:48:42 4 today?

01:48:42 5 A. No, I don't.

01:48:48 6 Q. Did you place those files in the
01:48:50 7 possession of a particular person prior to your
01:48:54 8 departure from Bermuda Hundred?

01:48:56 9 A. To the best of my recollection those
01:48:58 10 files were left in the existing file system,
01:49:02 11 either in the office that I had occupied or in
01:49:08 12 any other area where, quote, central file records
01:49:10 13 might have been maintained.

01:49:12 14 Q. And is that central file records
01:49:14 15 within Bermuda Hundred, or are you talking about
01:49:18 16 a larger central files that encompasses --

01:49:20 17 A. Central files within Bermuda Hundred,
01:49:22 18 basically in office files versus out of office
01:49:26 19 files that my secretary ^{maintained} ~~maintains~~.

01:49:30 20 Q. And at the time that you left Bermuda
01:49:32 21 Hundred, was there a particular person who was in
01:49:34 22 charge of the central files?

01:49:36 23 MR. MURPHY: At Bermuda Hundred?

01:49:38 24 MR. ROGERS: At Bermuda Hundred.

01:49:42 25 A. I believe that my secretary at that

2058451996

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01:49:46 2 time was the principal person responsible for the
01:49:48 3 filing and maintenance of those documents that
01:49:50 4 were not kept in my office.

01:50:00 5 Q. And did your secretary go with you to
01:50:04 6 your next position or did she remain at Bermuda
01:50:04 7 Hundred?

01:50:06 8 A. She remained at Bermuda Hundred.

01:50:08 9 Q. What's her name?

01:50:10 10 A. Her name was Peggy Allen.

01:50:12 11 Q. Is she still employed by Philip
01:50:14 12 Morris?

:50:20 13 A. I believe so, but I'm not 100 percent
01:50:20 14 sure.

01:50:22 15 Q. Do you know at which facility at
01:50:24 16 Philip Morris she works?

01:50:26 17 A. I know, subsequent to the more
01:50:34 18 complete closure of Bermuda Hundred, that she
01:50:36 19 moved to the Park 500 facility.

01:50:40 20 Q. And to your knowledge is she still at
01:50:42 21 Park 500?

01:50:44 22 A. I'm not sure whether she is or not.

01:50:56 23 Q. Have you had any reason during the
01:50:58 24 course of your employment at Philip Morris to
:51:02 25 familiarize yourself with any description of the

2058452000

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01:51:04 2 RL process at Park 500?

01:51:12 3 MR. MURPHY: I object to the form of
01:51:12 4 the question. I think it's very broad. But if
01:51:14 5 the witness understands the question, he can
01:51:14 6 answer it.

01:51:24 7 A. As the manager of the tobacco
01:51:30 8 materials group or tobacco materials division in
01:51:34 9 R&D, since one of the areas that I was
01:51:42 10 responsible for was an RL-like pilot plant, I am
01:51:48 11 sure that there were aspects of the process that
01:51:54 12 came up in the course of business, in discussions
:51:56 13 with those people working for me who were more
01:52:00 14 knowledgeable in the process, that I availed upon
01:52:04 15 their process understanding to enhance my process
01:52:08 16 understanding, to understand why we might carry
01:52:10 17 out a piece of work or how it applied to that
01:52:10 18 facility.

01:52:16 19 Q. Can you think of any document in
01:52:18 20 particular that you would have seen as part of
01:52:20 21 this?

01:52:20 22 A. No.

01:52:22 23 MR. MURPHY: I object to the form.
01:52:24 24 You can answer.

:52:36 25 Q. Are there separate finished sheet

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01:52:38 2 specifications for the RL that's manufactured at
01:52:40 3 Park 500?

01:52:42 4 MR. MURPHY: I object to the form of
01:52:44 5 the question. What do you mean by "separate"?
01:52:46 6 Separate from what?

01:52:48 7 MR. ROGERS: Separate from the
01:52:56 8 specifications for the reconstituted tobacco at
01:52:56 9 BL.

01:52:58 10 MR. MURPHY: Is the question are
01:53:00 11 there finished sheet specifications for RL
01:53:02 12 manufactured at Park 500?

:53:02 13 MR. ROGERS: That's exactly the
01:53:04 14 question.

01:53:04 15 MR. MURPHY: Okay. If you understand
01:53:06 16 the question, you can answer.

01:53:10 17 A. I believe that to be the case.
01:53:12 18 However, I haven't had any reason to look at
01:53:16 19 those specifications to be able to answer that
01:53:22 20 question from a point of fact or knowledge.

01:53:28 21 Q. So the specifications that we were
01:53:32 22 talking about this morning that fall within the
01:53:36 23 jurisdiction of your department, are those
01:53:40 24 specifications exclusive to the finished product
:53:40 25 specifications?

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01:53:42 2 MR. MURPHY: I object to the form of
01:53:44 3 the question. You can answer.

01:53:50 4 A. Those specifications cover, as I
01:53:52 5 believe I stated this morning, cover
01:53:56 6 specifications for certain types of direct
01:54:02 7 materials, as well as specifications for finished
01:54:02 8 cigarette products.

01:54:14 9 Q. As of March 24, 1994, do you know who
01:54:18 10 was in charge or had ultimate responsibility for
01:54:22 11 the finished product specifications for the RL
01:54:26 12 that was manufactured at Park 500?

:54:30 13 A. No, I do not.

14 (Knudson Exhibit 3 for
15 identification, memorandum from the quality
16 council to all Park 500 employees.)

01:55:52 17 Q. Mr. Knudson, you've just been handed
01:55:56 18 what's been marked Knudson Exhibit 3, which is a
01:56:00 19 memorandum from the quality council to all Park
01:56:04 20 500 employees dated July -- it appears to be July
01:56:08 21 13th, 1993. The date is covered by the
01:56:10 22 confidentiality stamp.

01:56:12 23 The Bates numbers on the document are
01:56:20 24 PA 447158 to PA 447170. The corresponding
:56:26 25 production numbers are 2030486181 through

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01:56:30 2 2030486194.

01:56:34 3 Have you ever seen this document
01:56:36 4 before?

01:56:36 5 A. No, I have not.

01:56:42 6 Q. The reference to quality council on
01:56:46 7 the first page, do you understand that to be the
01:56:50 8 quality council you described to me this
01:56:50 9 morning?

01:56:52 10 A. I wouldn't know whether that was the
01:56:54 11 quality council that I described to you this
01:57:00 12 morning or whether in fact the Park 500 facility
01:57:06 13 uses that term to describe a within-factory group
01:57:10 14 of people who play a similar but more focused
01:57:10 15 role around the factory.

01:57:14 16 Q. Do you know whether there is such a
01:57:18 17 separate quality council within the Park 500
01:57:18 18 facility?

01:57:20 19 MR. MURPHY: I object to the form of
01:57:22 20 the question. I'm not sure the terminology is
01:57:24 21 correct in light of the witness's testimony. But
01:57:26 22 if you understand what you're being asked, you
01:57:28 23 can answer the question.

01:57:30 24 A. No, I don't know whether that
01:57:34 25 terminology is used to apply to a functionality

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01:57:36 2 within the factory or not.

01:57:38 3 Q. Do you know whether there is -- and
01:57:42 4 I'll use your words -- a within-factory group of
01:57:46 5 people who play a similar but more focused role
01:57:48 6 as the quality council that you described this
01:57:48 7 morning?

01:57:56 8 A. It is my understanding of the MIP
01:58:04 9 process that there is a functionality that exists
01:58:10 10 that, for lack of a better term, let me call a
01:58:12 11 committee, to not be confused with words like
01:58:20 12 "council," that would exist both for staff
:58:28 13 groups and for factory groups, that essentially
01:58:32 14 represents a factory management team.

01:58:34 15 Whether or not in the Park 500
01:58:40 16 environment that team has adopted a name, i.e.
01:58:42 17 "the quality council," I do not know.

01:58:46 18 Q. On this first page it lists the
01:58:50 19 subject matter as the 1994 annual quality plan.
01:58:54 20 And I'll read the summary that appears on this
01:58:54 21 first page.

01:58:56 22 "Park 500's 1994 annual quality plan
01:59:00 23 objectives reflect the QC's expectations
01:59:02 24 necessary to remain competitive in today's
:59:06 25 marketplace. Although all are important,

2058452005

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01:59:08 2 reducing the cost of producing RL must be our
01:59:10 3 foremost objective.

01:59:12 4 "To meet senior management's
01:59:14 5 objective of becoming the low cost producer in
01:59:18 6 our industry, all of Philip Morris's facilities
01:59:22 7 must make equal contributions that fairly
01:59:26 8 distribute this task. Ideas on how to take costs
01:59:32 9 out of all of Park 500 systems must come from
01:59:32 10 every employee in order for us to meet this
01:59:34 11 objective."

01:59:38 12 Prior to looking at this document,
:59:42 13 were you aware of this objective at Park 500?

01:59:42 14 A. No.

01:59:52 15 Q. Can you think of any process or
01:59:56 16 product changes at Park 500 that were implemented
02:00:04 17 with an eye towards this objective of, quote,
02:00:08 18 becoming the low cost producer in our industry?

02:00:10 19 MR. MURPHY: I object to the form of
02:00:12 20 the question. You can answer.

02:00:18 21 A. I wouldn't have any awareness of
02:00:24 22 anything that had occurred vis-a-vis this focus.

02:00:28 23 Q. During your tenure at Philip Morris,
02:00:32 24 have you ever been involved in a process
:00:36 25 improvement project at Park 500?

2058452006

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02:00:46 2 A. To the best of my recollection, I
02:00:48 3 have not been involved in any such process
02:00:52 4 improvement activity. That's not to say that
02:00:56 5 that kind of an activity may not have occurred
02:00:58 6 somewhere within my organization.

02:01:02 7 Q. During your tenure at Philip Morris,
02:01:04 8 have you ever been involved in a product
02:01:06 9 improvement project at Park 500?

02:01:10 10 A. Not to the best of my knowledge.

02:01:16 11 Q. If you'll turn to the fourth page of
02:01:22 12 this exhibit, Knudson 3, the Bates stamp that
:01:28 13 appears is PA 447161, and at the top of the page
02:01:30 14 there's some handwritten notes, and in the first
02:01:36 15 typed line is, "1994 AQP objectives and focus."
02:01:40 16 And then the next line is "Quality of RL product
02:01:40 17 and processes."

02:01:46 18 I want to focus on item number 2,
02:01:48 19 which reads, "Implement improvements which will
02:01:54 20 reduce RL process variation such as," and I'll
02:01:58 21 list the three typed items that are on this page,
02:02:00 22 "Development of fiber sized measurement and
02:02:06 23 control; optimize tobacco solubles control." The
02:02:10 24 third is "Additional improvement suggestions."

:02:10 25 I want to ask you about the second

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02:02:14 2 item on there, "Optimize tobacco solubles

02:02:16 3 control." Do you know what tobacco solubles

02:02:18 4 are?

02:02:26 5 A. In the context of the RL process, the

02:02:30 6 essence of the process is one in which the

02:02:36 7 tobacco solubles are separated from the

02:02:46 8 cellulosic material in the incoming feedstock.

02:02:52 9 And those tobacco solubles I assume are what are

02:02:52 10 being referred to here.

02:02:56 11 Q. And have you ever heard the

02:03:00 12 expression "optimize tobacco solubles control"?

:03:10 13 A. To answer that question, I cannot say

02:03:12 14 that I have seen this document or heard that term

02:03:18 15 in the context of this document. The distinct

02:03:24 16 probability is that, at some point in time, that

02:03:28 17 a terminology such as optimize anything is a term

02:03:30 18 that I could well have heard.

02:03:32 19 So I can't say that I haven't heard

02:03:36 20 that term, but I cannot remember specifically

02:03:38 21 hearing that phrase.

02:03:48 22 Q. Do you know what the target tobacco

02:03:54 23 soluble level is for the finished sheet at Park

02:03:54 24 500?

:03:56 25 MR. MURPHY: I object to the form of

2058452008

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02:04:02 2 the question. You can answer the question.

02:04:12 3 A. The answer is no. However, with
02:04:14 4 respect to the question, it is my understanding
02:04:18 5 that there are in fact two sheets produced there,
02:04:22 6 that is, two products with different flavor
02:04:28 7 systems. But no, I do not know what the, quote,
02:04:32 8 target solubles level is for either one of
02:04:32 9 those.

02:04:38 10 Q. What are the two sheets to which
02:04:40 11 you're referring?

02:04:42 12 A. In the terminology that I'm most
04:48 13 familiar with, those products are referred to as
02:04:52 14 RLB and RLTC.

02:04:56 15 Q. And with respect to RLB, do you know
02:05:00 16 whether there is a finished product specification
02:05:02 17 for the solubles level?

02:05:04 18 MR. MURPHY: I object to the form.
02:05:08 19 Total soluble level finished sheet, is that the
02:05:08 20 question?

02:05:08 21 MR. ROGERS: Yes.

02:05:12 22 A. No, I do not.

02:05:18 23 Q. And with respect to RLTC, do you know
02:05:20 24 whether there is a finished product specification
05:24 25 for the solubles level?

2058452009

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02:05:26 2 A. No, I do not.

02:05:32 3 Q. Do you know what comprises the
02:05:36 4 tobacco solubles in the RL process?

02:05:38 5 MR. MURPHY: I object to the form of
02:05:40 6 the question. You can answer the question.

02:05:46 7 A. The tobacco solubles in the RL
02:05:54 8 process would have different constituencies at
02:06:06 9 different points in the process.

02:06:08 10 Q. Let's take the stage in the process
02:06:14 11 where the solubles are extracted from what you
02:06:18 12 described as the cellulosic material. So I'm
02:06:20 13 talking early on in the process. What are the
02:06:24 14 constituencies of that soluble?

02:06:26 15 MR. MURPHY: I object to the form of
02:06:28 16 the question. Misstates his prior testimony.
02:06:30 17 You can answer the question.

02:06:32 18 Q. Do you understand my question?

02:06:36 19 A. If I understand your question, and
02:06:42 20 perhaps if I'll restate it it's most clear, at
02:06:44 21 the point in time where a liquor stream
02:06:52 22 represents a separation of the tobacco solubles
02:07:02 23 from the initial feedstock, there is a stream
02:07:08 24 containing large amounts of water, plus an array
02:07:14 25 of tobacco solubles that I'm not able to

2058452010

MANHATTAN REPORTING CORP.

1 Knudson - Highly Confidential - Trade Secret
02:07:16 2 enumerate all the components that are in there.

02:07:18 3 Q. What components are you able to
02:07:20 4 enumerate?

02:07:28 5 A. Dependent upon the feedstock, but
02:07:40 6 assuming what I will call a typical feedstock to
02:07:46 7 that process, there are certain tobacco
02:07:50 8 components which are soluble, and would be
02:07:54 9 expected to be found in that stream.

02:08:00 10 Those would include sugars. It would
02:08:06 11 include nicotine. It would include any number of
02:08:12 12 other compounds that I'm not able to enumerate.

:08:18 13 Q. With respect to the RLB that you made
02:08:22 14 reference to before, do you understand there to
02:08:26 15 be a single blend formula for the RLB in terms of
02:08:28 16 the raw materials?

02:08:30 17 MR. MURPHY: I object to the form.
02:08:30 18 You can answer.

02:08:38 19 A. I'm not familiar with the blend
02:08:42 20 formulas associated with the RL process.

02:08:58 21 Q. Are you familiar with the term
02:09:00 22 "refractive index"?

02:09:02 23 A. Yes, I am.

02:09:02 24 Q. What do you understand that term to
09:02 25 mean?

2058452011

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02:09:08 2 MR. MURPHY: Objection. Are you
02:09:12 3 asking with reference to any particular process,
02:09:14 4 or are you asking as a general engineering term?

02:09:16 5 MR. ROGERS: I'm asking first as a
02:09:18 6 general engineering term.

02:09:24 7 A. I'm going to be sketchy on this,
02:09:28 8 because it's been a lot of years, but I know that
02:09:38 9 refractive index is a measure of the refraction
02:09:42 10 of light, and it can be used with certain
02:09:46 11 materials as one way of determining whether or
02:09:56 12 not -- for instance, a pure water sample might
10:00 13 have one refractive index, and the addition of
02:10:02 14 certain constituents that still allowed a
02:10:06 15 refractive index to be performed on it might
02:10:10 16 cause a predictable shift in refractive index,
02:10:12 17 and as such it becomes something that would be
02:10:18 18 used as a tool in a laboratory for one form of
02:10:20 19 making physical measurements on a solution.

02:10:28 20 Q. With respect to the RL process, what
02:10:30 21 do you understand the term "refractive index" to
02:10:32 22 mean?

02:10:32 23 MR. MURPHY: Objection to form. Lack
02:10:34 24 of foundation. You can answer the question if
10:36 25 you understand it.

2058452012

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02:10:38 2 A. I'm not sure I'm familiar with how
02:10:40 3 refractive index is used in the RL process.

4 (Knudson Exhibit 4 for
5 identification, handwritten notes.)

02:11:22 6 Q. Mr. Knudson, you've just been handed
02:11:24 7 what's been marked as Knudson Exhibit 4, which is
02:11:32 8 a document of handwritten notes. The production
02:11:40 9 numbers are PA 911007 through PA 911009. The
02:11:40 10 corresponding Philip Morris production numbers
02:11:50 11 are 2030687558 through 2030687560.

02:11:52 12 This is not your handwriting, is it?

:11:52 13 A. No.

02:11:54 14 Q. Do you recognize this handwriting?

02:11:56 15 A. No, I do not.

02:12:00 16 Q. On the very first page there's a
02:12:04 17 series of bullet points. I want to ask you about
02:12:10 18 the second to last bullet point. And it's in
02:12:10 19 quotation marks, and I'll simply read it.

02:12:12 20 "We are not putting the amount of
02:12:16 21 solubles on the sheet we think we are." And then
02:12:20 22 in parentheses, "Refractive index."

02:12:22 23 Have you ever heard concern about the
02:12:30 24 amount of solubles being placed on the sheet at
:12:32 25 Park 500?

2058452013

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02:12:42 2 A. I think the only thing that I can say
02:12:48 3 is that I'm aware that discussions about the
02:13:00 4 soluble levels as applied to sheet are of
02:13:02 5 interest, were of interest ^{within} areas I was
02:13:06 6 involved in, from the standpoint that the sheet
02:13:10 7 is capable of carrying only a certain degree of
02:13:16 8 or a certain level of solubles, since at the
02:13:20 9 point in time that those solubles are recombined
02:13:34 10 with the base web, they have had the addition of
02:13:36 11 flavor systems.

02:13:38 12 Then the nature and design of a
:13:40 13 flavor system combined with the solubles has to
02:13:44 14 be considered with respect to the ability to
02:13:52 15 reapply those solubles to the sheet.

02:13:54 16 I think that pretty well summarizes
02:14:00 17 my understanding of solubles with reference to
02:14:00 18 the base web.

02:14:06 19 Q. Turning back to this quote, the
02:14:10 20 reference here to refractive index, does that
02:14:12 21 refresh your recollection about the use of the
02:14:18 22 term "refractive index" with respect to the RL
02:14:18 23 process?

02:14:20 24 A. No, it surely does not.

:14:26 25 Q. As you understand the term

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MANHATTAN REPORTING CORP.

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02:14:32 2 "refractive index," would the amount of solubles
02:14:36 3 on the sheet -- could the amount of solubles on
02:14:40 4 the sheet be measured by refractive index as the
02:14:44 5 barometer, I guess is what I'm saying.

02:14:46 6 MR. MURPHY: I object to the form of
02:14:48 7 the question. I don't think you're paying the
02:14:50 8 witness an expert witness fee. But he can answer
02:14:50 9 the question.

02:14:56 10 A. Based on my limited understanding of
02:15:00 11 refractive index, I would think it would be
02:15:06 12 applicable only to solutions that were
:15:12 13 essentially clear or with minimal color so that
02:15:20 14 light passage could be measured and any
02:15:26 15 refraction or defraction determined.

02:15:28 16 So talking about solubles and talking
02:15:32 17 about subsequently applying those solubles back
02:15:34 18 to the base web resulting in the finished sheet
02:15:38 19 product, I'm not sure I understand the
02:15:40 20 application of the term "refractive index" to
02:15:40 21 that.

02:15:56 22 Q. Is it your understanding that
02:15:58 23 solutions that are not either, quote, essentially
02:16:04 24 clear, or, quote, of minimal color, could not be
:16:06 25 measured by the refractive index?

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MANHATTAN REPORTING CORP.

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02:16:08 2 MR. MURPHY: I object to the form of
02:16:12 3 the question and to this entire hypothetical
02:16:14 4 discussion. If this witness is being asked
02:16:16 5 general knowledge as an engineer about a process
02:16:18 6 that he has said he's not familiar with the use
02:16:22 7 of this term in connection with, I'll let him
02:16:22 8 answer the question.

02:16:24 9 But I don't know what the purpose of
02:16:24 10 this is.

02:16:26 11 MR. ROGERS: I'm simply asking,
02:16:28 12 David, based upon his knowledge of the term
:16:32 13 "refractive index" as an engineer, I'm asking
02:16:34 14 him to apply it to what he knows about the RL
02:16:34 15 process.

02:16:36 16 And in this case, this specific
02:16:40 17 document that's been entered as an exhibit makes
02:16:42 18 a reference to refractive index in the context of
02:16:46 19 a quote that addresses the amount of solubles on
02:16:48 20 the sheet.

02:16:50 21 So I'm just simply asking him to
02:16:52 22 apply his knowledge of refractive index and to
02:16:54 23 get an understanding as to whether or not you
02:16:58 24 could measure a sheet that isn't either, in the
:17:02 25 witness's terms, clear or of minimal color by use

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MANHATTAN REPORTING CORP.

1 Knudson - Highly Confidential - Trade Secret
02:17:04 2 of a refractive index.

02:17:06 3 MR. MURPHY: I object to the form of
02:17:08 4 the question. I object to the line of
02:17:10 5 questioning here. I will let the witness answer
02:17:12 6 the question. I think the document speaks for
02:17:12 7 itself.

02:17:14 8 I think counsel has no need to argue
02:17:16 9 what he thinks the document does or does not
02:17:20 10 represent. But he can answer the question based
02:17:20 11 on his own knowledge.

02:17:26 12 A. I don't think I have enough knowledge
:17:28 13 of or recollection of refractive index to be able
02:17:36 14 to shed any light on how that references the
02:17:38 15 quote there with respect to solubles and sheet.

02:17:48 16 Q. If you could turn to the last page of
02:17:52 17 this document, I'm going to ask you about the
02:17:56 18 final words on this page, and I'll just read them
02:18:00 19 again. "Refractive index measure," and then
02:18:02 20 there's an arrow from the word "refractive" down
02:18:06 21 to the word "Sharkey," and then there's a dash,
02:18:10 22 and then there's a quote, "We are driven by
02:18:10 23 this."

02:18:12 24 Do you know anyone named Sharkey who
:18:14 25 worked for Philip Morris?

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MANHATTAN REPORTING CORP.

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02:18:16 2 MR. MURPHY: I object to the form of
02:18:18 3 the question. You can answer.

02:18:22 4 A. I have a recollection of having heard
02:18:30 5 that name. And that recollection includes that
02:18:32 6 that name applies to an individual at Park 500.
02:18:34 7 I don't know whether that's a first name or a
02:18:42 8 last name. That's the extent of my knowledge.

02:18:50 9 Q. Have you ever heard that, and I'm
02:18:54 10 using this quote here on this document, that
02:19:00 11 Philip Morris is, quote, driven by refractive --
02:19:02 12 the refractive index measure?

:19:14 13 A. No, I have not.

02:19:22 14 Q. Do you know in the RL process how
02:19:30 15 Philip Morris determines the quantity of liquor
02:19:34 16 to apply to the cellulosic materials?

02:19:36 17 A. No, I don't.

02:19:50 18 Q. Do you know whether in the RL process
02:19:52 19 the raw materials are measured for their soluble
02:19:54 20 content?

02:19:58 21 A. No, I don't.

02:20:04 22 Q. Do you know whether the finished
02:20:06 23 sheet at Park 500 is measured for its soluble
02:20:08 24 content?

:20:14 25 A. I don't know as an absolute fact that

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MANHATTAN REPORTING CORP.

1 Knudson - Highly Confidential - Trade Secret
02:20:18 2 that occurs. I have reason to believe based on
02:20:20 3 conversations that I've heard that there must be
02:20:26 4 some measurement made of that characteristic.

02:20:28 5 Q. When we were talking earlier about
02:20:30 6 your general understanding of the term
02:20:34 7 "solubles," and we focused on an early stage in
02:20:36 8 the process when the solubles are separated from
02:20:40 9 the fibrous material, and you mentioned that
02:20:42 10 among those solubles were sugars, nicotine, and
02:20:46 11 then other compounds, your earlier testimony had
02:20:50 12 been that the constituencies of the solubles
:20:52 13 changes during the course of the RL process. I'm
02:20:56 14 paraphrasing your testimony.

02:21:00 15 Tell me what other constituencies of
02:21:04 16 solubles, other than those you've mentioned,
02:21:08 17 appear at any later point in the RL process.

02:21:10 18 MR. MURPHY: I object to the form of
02:21:12 19 the question. I think, Alex, as asked, that's
02:21:16 20 almost unanswerable. The witness has already
02:21:18 21 testified that he doesn't know all of the
02:21:22 22 constituencies of this process or of the solubles
02:21:26 23 even at the initial point that you described.

02:21:26 24 MR. ROGERS: I'm not asking whether
:21:30 25 he knows all the constituencies. All I'm trying

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MANHATTAN REPORTING CORP.

1 Knudson - Highly Confidential - Trade Secret
02:21:32 2 to identify is whether he knows of other
02:21:36 3 constituencies that, for whatever reason, are in
02:21:40 4 the solubles at a point later than that which he
02:21:44 5 described the sugars, the nicotine and other
02:21:46 6 compounds being present.

02:21:46 7 MR. MURPHY: With that clarification,
02:21:48 8 if you understand the question, you can answer
02:21:48 9 the question.

02:21:52 10 A. I think the easiest way to answer the
02:21:56 11 question is to go to the extreme end of the
02:22:00 12 process as far as the soluble stream goes, and
:22:08 13 say that that soluble stream that is reapplied to
02:22:16 14 the base web has been added to by the flavor
02:22:20 15 systems that are added to that.

02:22:26 16 It has had the nitrate removed. And
02:22:28 17 it has had the -- it has gone through a
02:22:36 18 concentration effect which has caused a reduction
02:22:42 19 in water, and presumably a reduction in some or
02:22:44 20 all of the other compounds that were in it when
02:22:48 21 it went through that concentration phase.

02:22:54 22 I have no understanding of the
02:22:58 23 details of any of those, quote, concentrations
02:22:58 24 that occur.

:23:02 25 Q. Under the category of flavor systems

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MANHATTAN REPORTING CORP.

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02:23:04 2 as you've described them, can you think of any
02:23:08 3 specific flavors in either the RLB or the RLTC
02:23:12 4 that would be a part of this soluble stream?

02:23:18 5 A. What I am familiar with is that the
02:23:26 6 RLTC is sometimes referred to as a cooked flavor
02:23:32 7 product. There is some set of constituents that
02:23:34 8 I'm not familiar with that constitute this cooked
02:23:40 9 flavor, that are combined with the concentrated
02:23:52 10 soluble stream. And that is the post nitrate
02:23:56 11 removal concentrated stream.

02:24:02 12 In the case of RLB, I'm not aware of
:24:10 13 the total flavor system that is utilized. I do
02:24:14 14 know that two of the constituents that are
02:24:18 15 utilized are diammonium phosphate and urea.

02:24:24 16 And I should correct that. There was
02:24:26 17 a period of time where I knew that to be the
02:24:30 18 case. Because I don't look at those flavor
02:24:32 19 systems with any regularity or have any reason
02:24:38 20 to, I can only say that was the case at a time
02:24:40 21 back in the late 1980s.

02:24:46 22 Q. I'm not sure I understand that last
02:24:50 23 part of your answer. And I'll just read it to
02:24:52 24 you. "There was a period of time where I knew
:24:56 25 that to be the case. Because I don't look at

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1 Knudson - Highly Confidential - Trade Secret
02:25:00 2 those flavor systems with any regularity" -- to
02:25:02 3 what were you referring with respect to the word
02:25:06 4 "that"? The diammonium phosphate and the urea?

02:25:08 5 A. When I characterized I was aware of
02:25:10 6 two of the constituents used in the RLB flavor
02:25:14 7 system, those being diammonium phosphate and
02:25:18 8 urea, that in order to be perfectly clear, what I
02:25:20 9 needed to clarify was that since I don't work in
02:25:22 10 that area with any regularity, what I'm not sure
02:25:26 11 of is the changes ~~that~~ may have occurred and ^{they} ~~that~~
02:25:28 12 may or may not continue to be in that flavor
:25:28 13 system.

02:25:34 14 Q. In the late 1980s, were you working
02:25:38 15 on a specific project that involved the
02:25:40 16 diammonium phosphate and/or the urea?

02:25:44 17 A. No. I characterize it that way
02:25:46 18 because during the time that I was in R&D and had
02:25:52 19 the -- as one of the areas within my
02:26:00 20 organization, the RL pilot plant, there was I
02:26:04 21 think sufficient familiarity with the flavor
02:26:08 22 systems, and any work that would have been done
02:26:10 23 would have probably been done through the pilot
02:26:14 24 plant initially, such that had there been changes
:26:20 25 occurring in that time frame, I probably would

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MANHATTAN REPORTING CORP.

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02:26:20 2 have been familiar with them.

02:26:22 3 Q. Can you recall any specific flavor
02:26:24 4 projects in this pilot plant?

02:26:28 5 MR. MURPHY: I object to the form.
02:26:28 6 You can answer.

02:26:40 7 A. My recollection was that for a period
02:26:48 8 of probably years, there were continuing efforts
02:26:58 9 to look at the ability to produce RL, which had
02:27:08 10 flavor characteristics similar to BL. The RLB
02:27:14 11 flavor system is an approximation of that, but
02:27:22 12 not necessarily an identical -- subjectively
02:27:26 13 identical product.

02:27:28 14 Q. What were the flavor characteristics
02:27:34 15 of BL that you were seeking to obtain in the
02:27:36 16 production of RL that you've just referred to?

02:27:38 17 MR. MURPHY: I object to the form of
02:27:40 18 the question. You can answer.

02:27:46 19 A. Since I have never considered myself
02:27:52 20 a subjective expert, I would be remiss to try and
02:27:54 21 represent what it was that we were trying to
02:28:00 22 accomplish there, and where we were successful or
02:28:04 23 where we were deficient. I was simply aware that
02:28:08 24 that was an ongoing project, to try and achieve a
02:28:10 25 subjective parity.

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MANHATTAN REPORTING CORP.

1 Knudson - Highly Confidential - Trade Secret
02:28:16 2 Q. Would you describe the RL at this
02:28:20 3 time, then, as subjectively inferior to the BL in
02:28:22 4 terms of flavor?
02:28:32 5 A. I don't think that we would have
02:28:38 6 described any of the RL sheets as inferior. That
02:28:40 7 is, when I say "any," depending on which flavor
02:28:44 8 configuration was being used, I had different
02:28:48 9 nomenclatures. They were simply different.
02:29:02 10 Q. What did you mean by the term
02:29:06 11 "subjective parity"?
02:29:12 12 A. That in a subjective evaluation at a
:29:18 13 given level in a blend, that a subjective panel
02:29:24 14 would be unable to determine whether or not the
02:29:30 15 product being used was the BL product or this,
02:29:32 16 quote, BL-like RL.
02:29:44 17 Q. I see. So is it fair to characterize
02:29:50 18 this project then as to produce an RL that tasted
02:29:50 19 like BL?
02:29:52 20 MR. MURPHY: I object to the form.
02:29:52 21 You can answer.
02:30:06 22 A. The purpose of the project was to
02:30:12 23 produce an RL that was subjectively
not differentiable
02:30:18 24 ~~nondifferentiable~~ from the BL product being
:30:18 25 produced.

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MANHATTAN REPORTING CORP.

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02:30:24 2 Q. Do you know whether that objective
02:30:26 3 was ever achieved?

02:30:32 4 A. During the time that I was there, I
02:30:36 5 don't believe we've ever felt that we were 100
02:30:38 6 percent successful in that venture.

02:30:46 7 Q. Do you recall what specific either
02:30:50 8 flavors or process changes were tested so as to
02:30:52 9 attempt to achieve this objective?

02:30:56 10 A. No, I really don't recall.

11 (Knudson Exhibit 5 for
12 identification, meeting minutes, 11/22/83.)

:32:26 13 Q. Mr. Knudson, you've just been handed
02:32:30 14 what's been marked as Knudson Exhibit 5, which is
02:32:34 15 a document, on the top of which appears the line
02:32:40 16 "Meeting minutes, 11/22/83." The Bates stamp
02:32:48 17 numbers are PA 368695 to PA 368697. The
02:32:48 18 corresponding Philip Morris production numbers
02:33:00 19 are 2031158539 to 2031158541.

02:33:02 20 Right on the top of the first page is
02:33:06 21 ^{TOPIC:} a line, "~~Topic~~" making RL subjectively equivalent
02:33:12 22 to RCB." And there's a list of attendees of a
02:33:14 23 meeting, and your name appears as the second
02:33:22 24 attendee.

:33:24 25 The reference to RCB in the first

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MANHATTAN REPORTING CORP.

1 Knudson - Highly Confidential - Trade Secret
02:33:28 2 line, do you understand that to be BL?

02:33:28 3 A. Yes.

02:33:32 4 Q. Do you recall this meeting on
02:33:36 5 November 22nd, 1983?

02:33:38 6 A. No, I don't have any recollection of
02:33:38 7 this particular meeting.

02:33:40 8 Q. Have you ever seen this document
02:33:42 9 before?

02:33:44 10 A. I don't have any recollection of it,
02:33:50 11 but I in all likelihood, since I was an attendee
02:33:54 12 to this meeting, was in fact copied on this as an
02:33:56 13 attendee.

02:33:58 14 Q. And looking at the names of the other
02:34:02 15 attendees, are those the people that were working
02:34:04 16 with you on this project that you've just been
02:34:08 17 describing with respect to making RL subjectively
02:34:10 18 equivalent to BL?

02:34:14 19 A. To clarify the working relationship
02:34:20 20 here, this is a project that would have been
02:34:28 21 worked on by certain people in my organization,
02:34:30 22 in this time frame.

02:34:32 23 This would be the time frame when I
02:34:34 24 was ^a manager of the tobacco materials
02:34:42 25 division. So that group that I described of ^a the

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MANHATTAN REPORTING CORP.

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02:34:44 2 couple of engineers working with the C pilot
02:34:46 3 plant would have been the people from my
02:34:50 4 organization involved in this activity.

02:34:52 5 Some of the other names on here are
02:35:02 6 people from other areas of the product
02:35:04 7 development organization who would have been
02:35:08 8 working with the flavor side, and we would have
02:35:10 9 been a test vehicle in the pilot plant for that
02:35:14 10 development work.

02:35:26 11 Q. At this time, November 22nd, 1983, do
02:35:28 12 you know what, looking at the first name, G.
:35:32 13 Keritsis, and I may be mispronouncing that, do
02:35:34 14 you know what his position or her position was?

02:35:56 15 A. Gus Keritsis was a -- Gus was a
02:35:58 16 professional on the technical ladder. What I
02:36:02 17 hesitate to do is to enumerate exactly what his
02:36:06 18 position was. Were I to say that he was a senior
02:36:10 19 professional on the technical ladder, my one
02:36:12 20 caution there is that that might in fact have
02:36:18 21 been an official title on the ladder, and that's
02:36:18 22 not what I mean to imply.

02:36:20 23 I truthfully can't recall whether Gus
02:36:22 24 was classified as a scientist or an engineer, and
:36:24 25 whether his title would have been senior

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MANHATTAN REPORTING CORP.

1 Knudson - Highly Confidential - Trade Secret
02:36:28 2 scientist, senior engineer, associate principal
02:36:30 3 scientist, associate principal engineer,
02:36:30 4 whatever.

02:36:34 5 Q. You've mentioned the term "technical
02:36:36 6 ladder" before. What is the technical ladder?

02:36:44 7 A. The technical ladder^{is a}-- how do I
02:36:48 8 describe it? It's basically the structure in
02:36:56 9 which nonmanagement personnel are able to pursue
02:37:00 10 a career development pathway which allows them to
02:37:08 11 take on greater and greater responsibilities and
02:37:14 12 be appropriately compensated and recognized.

:37:18 13 It is quite typical in certain types
02:37:20 14 of technical or research and development
02:37:24 15 organizations to have what's referred to as a
02:37:24 16 technical ladder.

02:37:28 17 Q. When you referred to "technical
02:37:30 18 ladder," did you mean exclusive to the research
02:37:32 19 and development department?

02:37:34 20 A. That's the context that I've been
02:37:36 21 using it in here.

02:37:40 22 Q. Are there any other technical ladders
02:37:40 23 at Philip Morris?

02:37:42 24 A. I believe that there is a technical
:37:44 25 ladder within the engineering organization that

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1 Knudson - Highly Confidential - Trade Secret
02:37:48 2 represents a progression that an engineer could
02:37:56 3 go through from his or her initial, say, junior
02:38:00 4 position, to positions of greater
02:38:02 5 responsibility.

02:38:04 6 Q. What's the highest rung on the
02:38:06 7 technical ladder in the research and development
02:38:06 8 department?

02:38:18 9 A. The -- for a significant period of
02:38:24 10 time, the highest rung on the technical ladder
02:38:30 11 was principal scientist or principal engineer.
02:38:38 12 What I'm not sure of is that in -- sometime in
02:38:42 13 the mid-80s, a singular position was created, or
02:38:44 14 what I at least understood to be a singular
02:38:52 15 position, titled "research fellow."

02:38:56 16 Subsequent to my leaving R&D, I
02:39:02 17 believe that that title may have been expanded
02:39:04 18 upon; that is, that there might have been a
02:39:06 19 development fellow at one point in time. I don't
02:39:10 20 know whether those titles still exist and I don't
02:39:10 21 know whether they were ever considered to be part
02:39:12 22 of the technical ladder.

02:39:16 23 Q. Let's turn back to Knudson Exhibit 5
02:39:24 24 here. And still on that first page, there are
02:39:26 25 two paragraphs under the subheading "Objective,"

2058452029

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02:39:28 2 and I'll just read them.

02:39:28 3 "The objective of the program is to
02:39:30 4 produce a sheet product at Park 500 that is
02:39:34 5 subjectively equivalent to RCB. This sheet would
02:39:36 6 be produced on one line and would provide a sheet
02:39:40 7 product mix that is more typical of past blends
02:39:42 8 and which is more subjectively acceptable
02:39:50 9 worldwide. The uneconomic alternate is expansion
02:39:52 10 of RCB production capacity with decreased usage
02:39:54 11 of existing Park 500 facilities.

02:39:58 12 "In order to achieve true parity with
:40:00 13 past sheet blends it may be necessary to convert
02:40:02 14 the remaining RL production to a flavor system
02:40:06 15 similar to 150-B. The present TC flavor is
02:40:12 16 regarded as 'tobacco-like,' while 150-B was more
02:40:14 17 like RCB."

02:40:14 18 Let's go back up to that first
02:40:20 19 paragraph. The second sentence, "This sheet
02:40:24 20 would be produced on one line and would provide a
02:40:26 21 sheet product mix that is more typical of past
02:40:28 22 blends and which is more subjectively acceptable
02:40:32 23 worldwide," what do you understand the reference
02:40:34 24 to "subjectively acceptable worldwide" to mean?

:40:42 25 A. I'm not sure at this point in time

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02:40:44 2 that I have a recollection as to what that
02:40:44 3 reference means.

02:40:54 4 Q. Is it your understanding at the time
of this meeting
02:40:58 5 ~~this was written~~, November of 1983, that the
02:41:06 6 sheet product at Park 500 was sold both
02:41:10 7 domestically and overseas, the same type of sheet
02:41:14 8 product, naming the same formula?

02:41:14 9 MR. MURPHY: I object to the form of
02:41:16 10 the question. I also think we're treading on the
02:41:18 11 judge's limitation with respect to export
02:41:22 12 product. But I'll let him answer this question.

:41:30 13 A. It is my recollection that at some
02:41:32 14 point in time, and I'm not sure for what
02:41:38 15 duration, i.e. when it started, when it stopped,
02:41:42 16 if it stopped, that there has been a market for
02:41:50 17 some quantity of RL sheet outside of the U.S.,
02:41:54 18 and that that -- that at least some of that
02:42:16 19 volume was supplied by Park 500.

02:42:18 20 Q. The reference here to "subjectively
02:42:20 21 acceptable worldwide," I understand that sitting
02:42:24 22 here today you don't have specific recollection.
02:42:28 23 Is it possible that the sheet that was being
02:42:30 24 produced at this time was acceptable in one
02:42:34 25 market, for instance the domestic market, and

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02:42:38 2 subjectively unacceptable in a different market,
02:42:40 3 say, an international market?

02:42:40 4 MR. MURPHY: I object to the form of
02:42:42 5 the question. And I'm directing the witness that
02:42:46 6 he should not answer questions with respect to
02:42:48 7 export product. I will, however, let him answer
02:42:50 8 the narrower question that I believe you've
02:42:52 9 asked.

02:42:54 10 MR. ROGERS: I'm not sure that I
02:42:56 11 understand your objection. Are you instructing
02:43:00 12 the witness not to answer my question?

:43:00 13 MR. MURPHY: No.

02:43:08 14 A. What is the question?

02:43:10 15 MR. MURPHY: I think, Alex, if you
02:43:14 16 can read back the question that you have pending,
02:43:16 17 I'm prepared to let him answer that question,
02:43:20 18 subject to and without waiving our position in
02:43:26 19 this litigation based upon the judge's December
02:43:28 20 30 ruling that what is at issue here is RL sheet
02:43:30 21 manufactured and sold as a component of or in
02:43:32 22 domestic cigarette product.

02:43:34 23 The narrower question you asked,
02:43:36 24 which I think treads upon the issue of export
02:43:40 25 product, but which is framed so as to try to

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02:43:44 2 avoid a general inquiry into export product, is I
02:43:46 3 think an effort to ask an appropriate question,
02:43:48 4 and if the witness understands and is able to
02:43:50 5 answer the question, I'm prepared to let him do
02:43:52 6 that on a no waiver basis.

02:43:54 7 MR. ROGERS: Why don't I then, based
02:43:56 8 upon your statement, read back the question that
02:43:58 9 I had originally asked.

02:44:00 10 Q. Is it possible, and I'm referring,
02:44:02 11 here again, to this reference to "subjectively
02:44:06 12 acceptable worldwide," is it possible that the
:44:08 13 sheet that was being produced at this time was
02:44:10 14 acceptable in one market, for instance the
02:44:14 15 domestic market, and subjectively unacceptable in
02:44:16 16 a different market, say, an international
02:44:16 17 market?

02:44:20 18 MR. MURPHY: And I object to the form
02:44:22 19 of the question as well. But you can answer the
02:44:22 20 question.

02:44:26 21 A. I wouldn't have any basis for knowing
02:44:28 22 how to even answer the question.

02:44:38 23 Q. In the second paragraph of this
02:44:42 24 objective statement here with respect to the
:44:46 25 meeting minutes, there's a reference to TC

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02:44:50 2 flavor, the present TC flavor. Do you know what
02:44:52 3 that means, TC flavor?

02:44:56 4 MR. MURPHY: Objection to form. You
02:44:58 5 can answer the question.

02:45:08 6 A. I believe that the TC flavor was
02:45:16 7 either a predecessor to or is in some way related
02:45:18 8 to the current product or flavor system
02:45:24 9 referenced as the current production product
02:45:26 10 RLTC.

02:45:32 11 Q. Have you ever heard the TC flavor at
02:45:36 12 this time, November of '83, described as, quote,
:45:44 13 tobacco-like?

02:45:46 14 A. Obviously if this kind of discussion
02:45:52 15 occurred in this meeting, then I probably heard
02:45:54 16 some reference to that. I don't have any
02:45:56 17 recollection of it.

02:46:04 18 Q. This final sentence in this section,
02:46:08 19 "The present TC flavors regarded as
02:46:12 20 'tobacco-like,' while 150-B was more like RCB,"
02:46:18 21 have you ever heard RCB described as not
02:46:20 22 tobacco-like?

02:46:22 23 MR. MURPHY: Objection to form. You
02:46:22 24 can answer the question.

:46:26 25 A. No, I don't know that I've heard it

2058452034

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02:46:32 2 described as not tobacco-like. Just potentially
02:46:34 3 different from some of the RL products.

02:46:40 4 Q. Have you ever heard the expression
02:46:42 5 "tobacco-like"?

02:46:46 6 A. Obviously "tobacco-like" probably was
02:46:50 7 an expression that was used with fair frequency
02:46:58 8 in discussing any number of things, whether it
02:47:00 9 dealt with flavor systems or aroma notes or
02:47:00 10 anything else.

02:47:02 11 Q. And based on your recollection of
02:47:08 12 this project, and looking at this document today,
:47:12 13 if something -- the description of something as
02:47:16 14 tobacco-like, would that be subjectively
02:47:20 15 acceptable or subjectively unacceptable?

02:47:20 16 MR. MURPHY: I object to the form of
02:47:22 17 the question. I think it's argumentative. The
02:47:24 18 witness can answer the question.

02:47:28 19 Q. Do you understand what I'm asking?

02:47:32 20 A. No, I'm not sure I do. The whole
02:47:36 21 area of subjectives is just that, a very
02:47:40 22 subjective arena. And I'm not a subjective
02:47:40 23 expert.

02:47:46 24 Q. I understand that. I'm simply trying
:47:48 25 to understand a reference in this document. I

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02:47:52 2 don't mean to be argumentative. It appears to
02:47:54 3 me, and correct me if I'm wrong, that there is
02:47:58 4 not subjective parity at this time between the RL
02:48:02 5 and the RCB. And there's an effort made to make
02:48:06 6 the RL subjectively equivalent to RCB.

02:48:08 7 MR. MURPHY: I object to the form of
02:48:12 8 the question. Counsel is testifying. I think
02:48:14 9 that the witness can answer the question if he
02:48:18 10 understands what he's being asked, but I think
02:48:20 11 that it's an improper question as framed.
02:48:26 12 Indeed, it's not even a question as framed.

:48:28 13 MR. KILLORY: He hasn't gotten to the
02:48:30 14 question yet.

02:48:30 15 MR. ROGERS: You made your objection
02:48:32 16 ^{did in fact} before I ~~ever did~~ get to the question. I was
02:48:34 17 simply laying the groundwork for the question,
02:48:38 18 and I hadn't gotten to it yet.

02:48:38 19 MR. MURPHY: I apologize.

02:48:44 20 Q. Let me return to my quick summary,
02:48:46 21 and again, if I've got something wrong, you
02:48:48 22 correct me. This is an effort to make RL
02:48:52 23 subjectively equivalent to RCB. So there is an
02:48:54 24 absence of what you referred to as subjective
02:48:58 25 parity. And there is a reference here in this

2058452036

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02:49:04 2 document describing a meeting that you attended
02:49:08 3 of, quote, tobacco-like flavor.

02:49:12 4 And that flavor is a flavor in RL,
02:49:16 5 not in RCB. And so what I'm trying to understand
02:49:20 6 is what the reference to "tobacco-like" means
02:49:26 7 with respect to the subjective differences of RL
02:49:28 8 and RCB.

02:49:30 9 MR. MURPHY: Objection. Asked and
02:49:32 10 answered. And the witness's testimony speaks for
02:49:34 11 itself. You can answer again if you want.

02:49:42 12 A. I'm not sure what more I can add to
:49:44 13 this. If we were to go back in testimony to
02:49:48 14 before this document was introduced, and you had
02:49:52 15 posed a question as to my recollection, and I
02:49:58 16 pointed out that the one recollection that I did
02:50:00 17 have was around work to try and develop a flavor
02:50:06 18 system for RL, not necessarily to be used for all
02:50:08 19 of the RL production, but for at least some
02:50:12 20 portion of production, that would allow it to
02:50:14 21 achieve a subjective parity, as measured by a
02:50:20 22 panel, with RCB.

02:50:22 23 Unfortunately, in the arena of
02:50:26 24 subjectives, a lot of these terms and
:50:30 25 terminologies that get used, tobacco-like,

2058452037

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02:50:34 2 nontobacco-like, whatever the term might be, may
02:50:38 3 mean something to either the author or the
02:50:44 4 individual who said it, but don't necessarily
02:50:46 5 create the same connotation for everybody
02:50:50 6 involved in a meeting or subsequently reading the
02:50:52 7 document or being asked to recall something from
02:50:56 8 a number of years ago.

02:51:30 9 Q. To your knowledge, November '83, had
02:51:36 10 150-B been used as a flavor in RL?

02:51:44 11 A. I don't -- I do not recall whether
02:51:48 12 150-B was in active use as a flavor at that point
:51:48 13 in time or not.

02:51:50 14 MR. MURPHY: And by "active use," you
02:51:52 15 mean in commercial product?

02:51:54 16 THE WITNESS: In commercial product.

02:52:02 17 Q. Did this project, and by that I mean
02:52:06 18 making RL subjectively equivalent to RCB, lead to
02:52:08 19 the development of 150-B and its use in
02:52:10 20 commercial product?

02:52:12 21 MR. MURPHY: Objection to form. You
02:52:14 22 can answer.

02:52:18 23 A. Not knowing whether 150-B was already
02:52:24 24 developed and in use, or whether this was at some
:52:28 25 stage of its development, and whether 150-B

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2 underwent any other changes, I simply can't
3 recall at this time.

4 Q. Let's stay on that first page. And
5 the next paragraph, there is -- the next
6 subheading is "Process," and the first sentence
7 reads, "RL coating is not a requirement but
8 coating technology is available for use if
9 required to meet the objective."

What is RL coating?

1 A. To the best of my recollection that
2 was a concept of adding small tobacco particles
3 to a -- to the RL product, which if I remember
4 correctly was intended to occur at the point in
5 time immediately after or in close proximity to
6 after the application of the size, that is, the
7 recombination of the solubles and flavor system
8 to the base web.

Q. Do you recall what those small tobacco particles were?

1 A. My recollection is that that was a
2 portion of the feedstock that went into the
3 process, that was deemed to be the least
4 contributory in terms of having a low yield in
5 the process.

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2058452039

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02:54:24 2 Q. What do you mean by "having a low
02:54:24 3 yield in the process"?

02:54:26 4 A. Before I answer that question, let me
02:54:30 5 go back, because obviously our memories play
02:54:38 6 tricks on us. In an effort to try and answer
02:54:40 7 your questions here on RL coating, I think I've
02:54:42 8 probably stretched the limits of my memory as I
02:54:46 9 think more about the coating process.

02:54:48 10 The coating process may have in fact
02:54:56 11 been an alternative to the current sizing
02:54:58 12 process, and it might have involved the
:55:02 13 combination of the small tobacco particles with
02:55:08 14 the existing solubles and flavor package, and
02:55:12 15 adding those all back simultaneously as opposed
02:55:12 16 to a second step.

02:55:20 17 Q. What did you mean in your prior
02:55:24 18 answer by the term "having a low yield in the
02:55:26 19 process"? And that reference was to the small
02:55:28 20 tobacco particles.

02:55:40 21 A. To my recollection, the very fine
02:55:48 22 tobacco particles that represent some portion of
02:55:52 23 the feedstock going into the RL process were
02:55:58 24 believed to be the biggest contributor to fiber
:56:04 25 loss in the movement of the cellulosic stream

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02:56:06 2 through the process.

02:56:12 3 An extremely difficult proposition to
02:56:14 4 prove, that that was in fact the source of the
02:56:18 5 yield loss. But it was always the subject of
02:56:24 6 some supposition, and the assumption was that by
02:56:28 7 taking that small tobacco and adding it back at a
02:56:32 8 point in time where it might not be lost, that
02:56:34 9 one could improve the yield of the process.

02:56:42 10 Q. So by "yield loss," you mean fiber
02:56:44 11 loss?

02:56:48 12 A. That would be my understanding, yes.
:56:52 13 Again, it wasn't an area that I worked in. It's
02:56:54 14 just an area that I have some recollection of.

02:56:58 15 Q. Is there anything else that would
02:57:00 16 contribute to yield loss other than fiber loss?

02:57:06 17 A. Oh, I think there are any number of
02:57:10 18 things in any process that could contribute to
02:57:14 19 yield loss. I'm not familiar enough with the
02:57:18 20 process to be able to enumerate all the things
02:57:22 21 that could contribute to yield loss, either on
02:57:26 22 the cellulosic side or on the soluble side.

02:57:28 23 Q. Is it your understanding that RL
02:57:36 24 coating has been used in RL sheet produced for
:57:38 25 commercial production and sale in the United

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02:57:40 2 States?

02:57:44 3 A. I don't have any recollection as to
02:57:46 4 whether that's a true statement or not.

02:57:50 5 MR. MURPHY: Are we at a good
02:57:50 6 breaking point?

02:57:52 7 MR. ROGERS: About five minutes.

02:57:52 8 MR. MURPHY: That's fine.

02:57:54 9 Q. If you'll turn to the next page,
02:58:04 10 please, Mr. Knudson, and I'm on PA 368696,
02:58:10 11 there's a number 3, and then there are two
02:58:14 12 paragraphs. Just to save time I'll simply go to
:58:16 13 the final paragraph, which reads as follows.

02:58:20 14 "It has been determined that DAP
02:58:24 15 (not just ammonia and cooking) are required to
02:58:28 16 achieve RCB character."

02:58:30 17 The reference here to DAP, do you
02:58:34 18 understand that to mean the diammonium phosphate
02:58:36 19 to which you referred earlier?

02:58:38 20 A. Yes, that would be a typical
02:58:40 21 vernacular to use when referring to diammonium
02:58:42 22 phosphate.

02:58:44 23 Q. And what's the difference between DAP
02:58:46 24 and ammonia?

:58:52 25 A. DAP is a white crystalline material,

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02:58:58 2 and ammonia is a liquid.

02:59:20 3 Q. Does DAP fall within the definition
02:59:22 4 of ammonia? Is DAP an ammonia, is what I'm
02:59:24 5 asking.

02:59:30 6 A. DAP is a compound that contains
02:59:32 7 ammonia.

02:59:44 8 Q. Do you know whether DAP is added to
02:59:46 9 RL sheet?

02:59:50 10 A. As I stated previously --

02:59:52 11 MR. MURPHY: Time frame?

02:59:54 12 MR. ROGERS: As of March '94. I'm
02:59:58 13 comfortable with that.

03:00:00 14 A. As I stated previously, in the time
03:00:06 15 frame of the middle to late '80s, it is my
03:00:10 16 recollection that diammonium phosphate is in fact
03:00:18 17 used in the flavor system referred to as the
03:00:22 18 flavor system that produces the product RLB.

03:00:24 19 MR. ROGERS: Why don't we take a
03:00:26 20 break now.

03:00:28 21 THE VIDEO OPERATOR: We're going off
03:00:32 22 the record. The time on the screen is 3:00:30.

03:00:34 23 (A recess was taken.)

03:27:22 24 THE VIDEO OPERATOR: This is
03:27:26 25 videotape number 3, the continuation of the

2058452043

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03:27:30 2 deposition of Mr. Knudson. The time on the
03:27:32 3 screen -- today is July 12th, 1995. The time on
03:27:36 4 the screen is 3:27:35. You're on the record.

03:27:40 5 Q. Mr. Knudson, just prior to the break,
03:27:44 6 we were talking about diammonium phosphate. And
03:27:48 7 I'll just read you your last answer, and then
03:27:50 8 we'll pick up from there.

03:27:52 9 My question was, "As of March 1994,
03:27:56 10 do you know whether DAP is added to RL sheet?"
03:27:58 11 And your answer was, "As I stated previously, in
03:28:02 12 the time frame of the middle to late '80s, it's
03:28:04 13 my recollection that diammonium phosphate is in
03:28:08 14 fact used in the flavor system referred to as the
03:28:10 15 flavor system that produces the product RLB."

03:28:18 16 Do you know why DAP is added?

03:28:20 17 MR. MURPHY: I object to the form.
03:28:20 18 You can answer the question.

03:28:36 19 A. I believe that DAP is utilized, since
03:28:40 20 it is a constituent in the BL process, that it's
03:28:46 21 utilized in order to provide some of the same
03:28:48 22 subjective character.

03:28:50 23 Q. Do you know why the DAP is used in
03:28:52 24 the BL process?

03:29:04 25 A. The utilization of DAP and ammonia in

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03:29:06 2 the BL process are part of the process chemistry
03:29:08 3 associated with the release of the naturally
03:29:14 4 occurring pectin in tobacco to allow the pectin
03:29:20 5 to be released, and subsequently in the drying
03:29:26 6 process, to reform, to bind the sheet together.

03:29:28 7 Q. What is pectin?

03:29:38 8 A. I don't know that I can answer that
03:29:42 9 question at any technical level. My
03:29:46 10 understanding is that pectin is a naturally
03:29:50 11 occurring constituent in a lot of vegetative
03:29:58 12 products that plays a binding role. I know that
:30:08 13 my wife uses pectins in making jellies.

03:30:10 14 Q. Does the DAP facilitate the binding
03:30:14 15 of the sheet in the BL process?

03:30:16 16 MR. MURPHY: Objection to form. You
03:30:18 17 can answer the question.

03:30:22 18 A. I have to admit that my recollection
03:30:26 19 of the process chemistry is quite vague at this
03:30:30 20 point in time. There was a point in time early
03:30:34 21 in my time with Philip Morris where I was
03:30:38 22 relatively familiar with the process chemistry of
03:30:40 23 the BL process.

03:30:44 24 But my basic recollection is that the
:30:48 25 role of the DAP and the ammonia are to create a

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03:30:54 2 circumstance wherein the tobacco slurry, the
03:30:56 3 pectin, is liberated.

03:30:58 4 So it plays a role in the liberation
03:31:04 5 of the pectin, and then it is the drying process
03:31:08 6 that results in the reaction in which the
03:31:10 7 reaction is driven back in the other direction
03:31:14 8 and the pectin reforms as a binder.

03:31:42 9 Q. Is there liberation of the pectin in
03:31:42 10 the RL process?

03:31:46 11 A. Not to the best of my knowledge.

03:31:54 12 Q. And you described the pectin being
:31:58 13 reformed as a binder in the drying process. Does
03:32:00 14 that process occur in the RL process?

03:32:04 15 A. Not to the best of my knowledge.

03:32:08 16 Q. In the BL process, other than the
03:32:10 17 descriptions you've just given, is there any
03:32:14 18 other reason why DAP and ammonia are added?

03:32:16 19 MR. MURPHY: I object to the form.
03:32:16 20 You can answer.

03:32:20 21 A. Not to the best of my knowledge.

03:32:30 22 Q. And your understanding, returning to
03:32:38 23 Knudson 5, and the page 2, the determination that
03:32:42 24 DAP and cooking are required to achieve RCB
:32:46 25 character, is it your understanding here that the

2058452046

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03:32:54 2 DAP would serve to improve the flavor of the RL?
03:33:06 3 A. That would be my understanding. I
03:33:12 4 should add a clarification to that. When we say
03:33:18 5 "improve the flavor," it's probably more
03:33:22 6 accurate to say move the flavor in a targeted
03:33:26 7 direction wherein that target was to make that
03:33:30 8 product more subjectively like RCB.
03:33:48 9 Q. Is DAP a base?
03:33:56 10 A. I ^{truthfully} don't know whether DAP is
03:34:02 11 acidic, basic or neutral.
03:34:04 12 Q. Do you know whether DAP increases or
03:34:06 13 decreases the pH level?
03:34:10 14 A. I'm not sure I know the answer.
03:34:44 15 Q. Are you familiar with the term
03:34:48 16 "subjective impact" as it describes a cigarette
03:34:50 17 or tobacco?
03:34:50 18 MR. MURPHY: I object to the form of
03:34:52 19 the question. I think it's vague. You can
03:34:54 20 answer the question if you understand how the
03:34:54 21 terminology is being used.
03:35:00 22 A. As I stated before, I don't consider
03:35:04 23 myself to be a subjective expert. As I also
03:35:08 24 stated, a number of terms are used by different
03:35:16 25 people to potentially have different meanings. I

2058452047

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03:35:24 2 have heard the terminology "subjective impact"
03:35:24 3 used.

03:35:26 4 As used by different people, it has
03:35:30 5 the potential to mean different things.

03:35:34 6 Q. In those instances in which you've
03:35:36 7 heard the terminology, "subjective impact," what
03:35:38 8 did you understand it to mean?

03:35:40 9 MR. MURPHY: Objection as to form.
03:35:42 10 Asked and answered. You can answer again.

03:35:58 11 A. I believe that to my way of thinking,
03:36:06 12 when I have heard the term "subjective impact," I
:36:10 13 have generally thought of it in the broadest
03:36:18 14 nomenclature, which would be an assessment as to
03:36:24 15 whether or not, for instance, in the case of the
03:36:32 16 arena that we've been speaking of, the movement
03:36:40 17 of a product in the direction it was being
03:36:44 18 targeted to subjectively, that the subjective
03:36:50 19 impact was in that direction or not in that
03:36:50 20 direction.

03:36:54 21 So it becomes a very broad kind of
03:36:56 22 all-inclusive bit of terminology.

23 (Knudson Exhibit 6 for
24 identification, Annual report, applied
25 technology, 1982-1983.)

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03:37:44 2 Q. Mr. Knudson, you've just been handed
03:37:46 3 what's been marked Knudson Exhibit 6, the cover
03:37:50 4 page of which says, "Annual report, applied
03:37:56 5 technology, 1982-1983," and there's a signature
03:38:00 6 line and a signature for Peter Martin. The Bates
03:38:06 7 stamps numbers are PA 828568 to PA 828609. The
03:38:14 8 Philip Morris numbers are 1000411651 to
03:38:18 9 1000411692.

03:38:22 10 And if you'll turn to the second page
03:38:28 11 of the document, PA 828569, you'll see what
03:38:30 12 appears to be a cover page for a research
03:38:36 13 project. The charge number and title is "2106
03:38:40 14 applied technology." And still on that page
03:38:42 15 there's a distribution list, and if you look on
03:38:48 16 the first column, the second to last name is D.
03:38:48 17 B. Knudson.

03:38:50 18 Is that you?

03:38:50 19 A. Yes, sir.

03:38:56 20 Q. Do you recall the applied technology
03:38:58 21 project?

03:39:00 22 A. No, I really don't have any
03:39:06 23 recollection. What you see here is the report
03:39:16 24 that I suspect was copied to directors and
03:39:20 25 managers across the R&D center as a courtesy, for

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MANHATTAN REPORTING CORP.

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03:39:22 2 their awareness.

03:39:24 3 Q. Do you know who Peter Martin is?

03:39:26 4 A. Yes, I know Peter Martin.

03:39:28 5 Q. At the date of this report, February
03:39:32 6 21, 1983, do you know what his position was at
03:39:34 7 Philip Morris?

03:39:36 8 A. No, I do not. I don't recall what
03:39:36 9 his position was at that time.

03:39:42 10 Q. Do you recall what positions he's
03:39:44 11 held at Philip Morris?

03:39:50 12 A. I certainly don't recall all the
:39:56 13 positions that Peter has held. There was a brief
03:40:04 14 period of time where he served -- when I was the
03:40:10 15 director of process development, and had -- we
03:40:14 16 had undergone some changes in organization.

03:40:16 17 I believe there was a brief period of
03:40:20 18 time measurable in months when he actually came
03:40:24 19 in and managed one of the divisions within my
03:40:26 20 organization. That would have been considerably
03:40:28 21 subsequent to this.

03:40:34 22 Q. At this time frame, February of 1983,
03:40:36 23 am I correct that you were serving as the manager
03:40:38 24 of the tobacco materials group?

:40:44 25 A. No, I believe in February of 1983 I

2058452050

MANHATTAN REPORTING CORP.

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03:40:46 2 still would have been the manager of the
03:40:48 3 Semi-Works.

03:40:48 4 Q. What is Semi-Works?

03:40:54 5 A. Semi-Works is a pilot plant facility
03:41:02 6 designed to emulate a primary process, and also
03:41:06 7 to include a make pack area.

03:41:08 8 Q. What is a make pack area?

03:41:12 9 A. It's an area where the actual
03:41:16 10 fabrication of cigarettes and subsequent packing
03:41:16 11 occurs.

03:41:26 12 Q. Turning back to Knudson Exhibit 6, do
03:41:30 13 :41:30 13 you recall receiving this annual report?

03:41:32 14 MR. MURPHY: Do you want the witness
03:41:34 15 to read this?

03:41:34 16 MR. ROGERS: Just simply from looking
03:41:36 17 at the -- glancing through it. We'll go through
03:41:40 18 some of the specific sections. I don't think
03:41:40 19 it's necessary to read the whole thing.

03:41:42 20 Q. I'm just trying to see if you recall
03:41:50 21 ever receiving this document.

03:41:50 22 A. I don't recall receiving it. The
03:41:52 23 fact that I'm on distribution in all probability
03:42:00 24 means that I did receive it. At the time, given
03:42:04 25 my area of responsibility, in general, on receipt

2058452051

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03:42:10 2 of a document like this, I would have taken a
03:42:10 3 quick glance to see what the contents of the
03:42:12 4 document were.

03:42:12 5 And if I felt like there was anything
03:42:14 6 in here that had potential application to the
03:42:20 7 area I was responsible for, I would have explored
03:42:24 8 the document further.

03:42:28 9 Based on looking at the -- just
03:42:32 10 glancing through the abstract page, my guess is
03:42:34 11 that there's not much in here that would have
03:42:36 12 been pertinent to my role as manager of the
03:42:42 13 Semi-Works. And as such, I would have not
03:42:46 14 bothered to read the document to any significant
03:42:46 15 degree.

03:42:50 16 Q. Why do you think as manager of
03:42:52 17 Semi-Works you would have received a copy of this
03:42:54 18 report?

03:42:56 19 A. I think it was a standard protocol or
03:43:02 20 courtesy to copy all of the managers within R&D
03:43:06 21 on a number of, quote, project reports that were
03:43:08 22 generated at that time.

03:43:10 23 Q. Still on the second page, is that the
03:43:16 24 standard cover page for a Philip Morris research
03:43:18 25 report?

2058452052

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03:43:18 2 MR. MURPHY: What time frame?

03:43:22 3 MR. ROGERS: The early 1980s.

03:43:24 4 A. I believe it is.

03:43:30 5 Q. Is that still the standard form for
03:43:30 6 research documents?

03:43:32 7 MR. MURPHY: I object to the form of
03:43:34 8 the question. I don't think you mean to be
03:43:38 9 vague, Alex, but by "standard form," do you mean
03:43:40 10 that the names on the distribution list change
03:43:42 11 over time, or --

03:43:42 12 MR. ROGERS: No, I simply mean the
03:43:46 13 structure of the material, the project number and
03:43:50 14 the project description, the dates, who the
03:43:54 15 author is, who it's been approved by.

03:43:56 16 MR. MURPHY: The format rather than
03:43:58 17 the contents?

03:43:58 18 MR. ROGERS: Exactly.

03:44:00 19 A. I can only say that to my
03:44:04 20 recollection, during the time that I was in R&D,
03:44:10 21 from 1982 through 1989, I don't recall any
03:44:12 22 significant change to this format. I couldn't
03:44:16 23 answer where it has moved subsequently.

03:44:18 24 Q. If you look at the box on the bottom
03:44:22 25 of this page, it says, "Key words," and then

2058452053

MANHATTAN REPORTING CORP.

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03:44:26 2 there are a series of terms. Cylinder heat
03:44:28 3 treatment, flavor modification, ammonia
03:44:32 4 treatment, reducing sugar. Do you know why
03:44:34 5 there's a key word box on this research
03:44:36 6 document?

03:44:42 7 A. I would assume it's a method of
03:44:44 8 cross-referencing the information in here.

03:44:48 9 Q. Do you know whether research
03:44:50 10 documents are filed according to key words?

03:44:50 11 A. No, I do not.

03:44:54 12 Q. Is there any way, if you wanted
:44:58 13 access to research documents, that you could
03:45:00 14 search for documents by use of a key word?

03:45:02 15 MR. MURPHY: Time frame?

03:45:06 16 Q. At the time that you were in R&D, '82
03:45:12 17 to '89.

03:45:12 18 A. I don't know whether there was or
03:45:12 19 not.

03:45:18 20 Q. If you'll turn to the abstract that
03:45:24 21 you just referred to a moment ago, I want to turn
03:45:28 22 to the third paragraph. I'll simply read it.

03:45:28 23 "A large number of flavor
03:45:32 24 modifications ^{were} ~~are~~ achieved by processing or
:45:36 25 chemical additions. The treatment of DBC bright

2058452054

1 Knudson - Highly Confidential - Trade Secret
03:45:38 2 with ammonia or pH adjustment has replicated the
03:45:42 3 burley impact but not the full burley flavor.
03:45:44 4 Flavor and impact of both burley and bright seem
03:45:48 5 to be removed by cold water extraction of the
03:45:50 6 original tobaccos."

03:45:52 7 Do you recall any research at this
03:45:56 8 time on the treatment of DBC bright with
03:46:00 9 ammonia?

03:46:00 10 A. No, I do not.

03:46:02 11 Q. How about any research at this time
03:46:06 12 on pH adjustment of DBC bright?

:46:08 13 A. No, I don't have any recollection of
03:46:10 14 that.

03:46:12 15 Q. Do you know what DBC bright is?

03:46:22 16 A. At one period in time, I believe that
03:46:30 17 DBC was a name applied, if you will, ^{to} ~~the~~
03:46:34 18 standard blend of bright tobaccos used in a
03:46:36 19 number of our products.

03:46:52 20 Q. Your testimony is that at one period
03:46:56 21 of time. Has the name changed, or is DBC still
03:46:56 22 used?

03:47:02 23 A. I don't know whether DBC is still
03:47:06 24 used and whether it means the same thing today or
03:47:06 25 not.

2058452055

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03:47:14 2 Q. Does DBC stand for something in
03:47:14 3 particular?

03:47:18 4 A. I believe it does. I recall at some
03:47:24 5 point in time some conjecture as to whether DBC
03:47:28 6 stood for designated blend component or some
03:47:32 7 other combination of words of which DBC would be
03:47:36 8 an acronym. It wasn't critical to understand
03:47:40 9 what the acronym meant, so I don't recall what
03:47:42 10 the actual acronym stood for.

03:47:46 11 Q. In this paragraph that I've read to
03:47:50 12 you, there is use of the words "impact" and
03:47:52 13 "flavor" in the same sentence. Do you
03:47:54 14 understand those two words to mean different
03:47:56 15 things?

03:47:58 16 MR. MURPHY: Objection as to form.
03:48:02 17 You can answer.

03:48:16 18 A. Reading this now, I would assume that
03:48:20 19 "flavor" and "impact" were intended to mean two
03:48:24 20 separate thoughts. I'm not sure what those
03:48:26 21 thoughts would have been.

03:48:30 22 Q. Have you ever heard the term "burley
03:48:30 23 impact"?

03:48:36 24 A. I'm sure I have.

03:48:38 25 Q. What do you understand the term

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03:48:40 2 "burley impact" to mean?

03:48:48 3 A. That burley tobacco is subjectively
03:48:50 4 different from bright tobacco or Oriental
03:48:50 5 tobacco.

03:49:00 6 Q. In what respects is burley tobacco
03:49:06 7 subjectively different from bright tobacco?

03:49:10 8 A. Again, I'm not a flavor expert. I'm
03:49:12 9 sure they could -- a flavor expert could very
03:49:16 10 accurately describe the different subjective
03:49:26 11 characteristics or nuances of those products. As
03:49:32 12 a layperson with respect to subjectives, burley
:49:36 13 and bright and Oriental all have unique
03:49:44 14 subjectives, and I think are discernibly
03:49:44 15 different.

03:49:48 16 I'm not sure that I could go into any
03:49:52 17 detail in describing what the nuances of those
03:49:52 18 differences are.

03:49:54 19 Q. Do you know which of those three
03:50:00 20 types of tobacco, burley, bright, and Oriental,
03:50:02 21 has the highest nicotine level?

03:50:12 22 A. I don't know it as an absolute fact.
03:50:18 23 I have some vague recollection. To answer that
03:50:22 24 question I would be guessing.

:50:48 25 Q. Let's turn to page 4 of this Knudson

2058452057

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03:50:50 2 Exhibit 6.

03:50:52 3 (Witness complies.)

03:50:58 4 Q. Production number PA 828574. There
03:51:00 5 is a subheading near the top of the page called
03:51:06 6 "Ammonia treatment." I'm going to ask you a few
03:51:06 7 questions about it, so I'll just read through
03:51:08 8 it.

03:51:08 9 "One of the many differences between
03:51:10 10 bright and burley tobacco is the presence of
03:51:14 11 reducing sugars in bright. One of the results of
03:51:16 12 heat treatment in a closed vessel is to decrease
:51:18 13 the level of reducing sugars in the sample.
03:51:20 14 The cylinder

"Cylinder" heat treatment might
03:51:24 15 replicate some of the reactions occurring in the
03:51:26 16 curing process as it maintains high water
03:51:28 17 activity. Preliminary subjective evaluation of
03:51:32 18 heat treated DBC bright assigned it some blended
03:51:34 19 characteristics although the impact remained very
03:51:34 20 low.

03:51:36 21 "It had been noted from work in the
03:51:40 22 flavor groups and from the BL plant that the
03:51:42 23 presence of ammonia tended to increase the
03:51:46 24 subjective impact of materials. This effect was
:51:50 25 tested by placing samples of DBC bright in

2058452058

MANHATTAN REPORTING CORP.

1 Knudson - Highly Confidential - Trade Secret
03:51:54 2 dessicators with varying quantities of ammonium
03:51:56 3 hydroxide and water.

03:51:58 4 "After long exposure (several days)
03:52:00 5 the sample was removed, heat treated and made
03:52:02 6 into cigarettes. Machine made cigarettes could
03:52:06 7 not be produced because of the limited mass of
03:52:06 8 processed material.

03:52:08 9 "Despite these problems the
03:52:10 10 cigarettes had impact similar to burley and were
03:52:14 11 judged quite favorably by some of the panelists.
03:52:16 12 However, several subjects noted the absence of
:52:18 13 what they considered burley flavor (as opposed to
03:52:22 14 impact) and although it proved possible to
03:52:26 15 optimize the impact by varying the exposure to
03:52:30 16 ammonia, it has proven impossible to produce the
03:52:32 17 complete burley character.

03:52:32 18 "Similar experiments have been
03:52:36 19 conducted by Harry Lanzillotti and Rett Southwick
03:52:38 20 using other methods to introduce ammonia to the
03:52:42 21 tobacco, but all show similar results." I'll
03:52:46 22 just stop there for a second.

03:52:52 23 Does this paragraph refresh your
03:52:56 24 recollection about tests to add ammonia for the
:53:00 25 purposes of increasing subjective impact?

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03:53:02 2 MR. MURPHY: I object to the form of
03:53:02 3 the question. You can answer.

03:53:08 4 A. I believe that by going back to the
03:53:12 5 previous page and reading some of the
03:53:18 6 introduction, the suggestion is that the
03:53:22 7 availability of burley tobacco in a worldwide
03:53:30 8 circumstance is not always -- that is, burley
03:53:32 9 tobacco is not always available and not always of
03:53:32 10 good quality.

03:53:38 11 The implication from reading that and
03:53:40 12 this, the conclusion that I would draw at this
:53:44 13 point in time as opposed to anything that I have
03:53:48 14 any recollection of was that this represents work
03:53:52 15 that could well have been carried out as to some
03:53:56 16 alternate way to provide a burley alternative in
03:53:58 17 some worldwide situation.

03:54:06 18 Q. Generally speaking, does burley have
03:54:10 19 higher nicotine content than bright?

03:54:10 20 MR. MURPHY: Objection. Asked and
03:54:10 21 answered.

03:54:14 22 MR. ROGERS: I think I asked a
03:54:16 23 different question before.

03:54:20 24 MR. MURPHY: I don't think in
:54:20 25 substance you did, but I'll let the witness

2058452060

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03:54:22 2 answer the question again.

03:54:26 3 A. I think the answer to the previous
03:54:28 4 question, which I think was perhaps a little
03:54:30 5 broader than this question, still requires the
03:54:34 6 same conjecture on my part. There may have been
03:54:38 7 a time where I had some familiarity with the
03:54:44 8 average nicotine levels in different tobacco
03:54:44 9 types.

03:54:46 10 I don't have an absolute recollection
03:54:48 11 of what those were and what the rank order of
03:54:52 12 those products were. If you would like for me to
:55:00 13 guess, I can do that.

03:55:00 14 MR. MURPHY: I'm going to object,
03:55:04 15 before you continue and have another question
03:55:08 16 pending, Alex, and suggest that if you have
03:55:12 17 questions about this particular section, I think
03:55:16 18 it's really about two pages of this document,
03:55:18 19 that it would be helpful if the witness were
03:55:20 20 given an opportunity to read the whole thing so
03:55:22 21 that he could get the full context of this.

03:55:24 22 MR. ROGERS: Absolutely.

03:55:26 23 MR. MURPHY: I won't take the time
03:55:28 24 right now to read it all into the record,
:55:28 25 although if you have questions about other

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MANHATTAN REPORTING CORP.

1 Knudson - Highly Confidential - Trade Secret
03:55:32 2 sections we can do that as you go.

03:55:32 3 MR. ROGERS: Sure.

03:55:36 4 Q. Mr. Knudson, do you want to take a
03:55:36 5 moment to read this section?

03:55:38 6 A. Yes, please. Thank you.

03:55:38 7 (Witness complies.)

03:59:12 8 A. Okay.

03:59:18 9 Q. Your answer to my prior question
03:59:18 10 about nicotine levels, I'll read your testimony.
03:59:20 11 "There may have been a time where I had some
03:59:22 12 familiarity with the average nicotine levels in-
:59:26 13 different tobacco types."

03:59:26 14 Are you referring there to a specific
03:59:30 15 time or position that you held at Philip Morris?

03:59:32 16 A. I would say that during the time that
03:59:36 17 I was in R&D, and probably most particularly
03:59:42 18 during the time that I was involved in the ART
03:59:46 19 process, whose goal was to remove nicotine from
03:59:52 20 tobacco, that I would have had greater reason to
03:59:54 21 have some awareness of the nicotine level in
03:59:56 22 different types of tobaccos.

03:59:58 23 It's not something that I have
04:00:00 24 retained in memory.

:00:04 25 Q. In this portion of the document

2058452062

1 Knudson - Highly Confidential - Trade Secret
04:00:06 2 you've just read, there is a reference at least
04:00:10 3 twice to Harry Lanzillotti. Do you know who that
04:00:10 4 is?

04:00:14 5 A. I know who Harry Lanzillotti is,
04:00:14 6 yes.

04:00:16 7 Q. At roughly this time, in February of
04:00:20 8 1983, do you know what Mr. Lanzillotti's position
04:00:20 9 was?

04:00:24 10 A. No, I don't. Again, he was, to the
04:00:28 11 best of my recollection, a scientist or engineer
04:00:32 12 on the technical ladder, not in an organization
04:00:34 13 that I was closely associated with. So I would
04:00:38 14 not be able to state what his title was.

04:00:46 15 Q. In the middle of page 5, roughly
04:00:50 16 halfway down the page, the sentence reads, "Harry
04:00:54 17 Lanzillotti had shown, footnote 5, that the
04:00:58 18 burley impact could^{also} be obtained by adding calcium
04:01:02 19 oxide to raise the pH of the tobacco. Similar
04:01:04 20 impact results have been obtained by adding KOH
04:01:04 21 to the tobacco.

04:01:08 22 "It appears there is a pH window for
04:01:10 23 satisfactory subjective results and that this
04:01:14 24 window encloses the pH of a typical burley
04:01:16 25 tobacco. It now seems likely that some of the

2058452063

1 Knudson - Highly Confidential - Trade Secret
04:01:18 2 impact of ammoniation arises from the change in
04:01:22 3 pH from that of a typical bright to that of a
04:01:24 4 typical burley. One result of this is that the
04:01:28 5 impact may be controlled by adjusting tobacco
04:01:30 6 pH."

04:01:32 7 Are you familiar with any work that
04:01:38 8 Mr. Lanzillotti has done on controlling pH levels
04:01:38 9 of tobacco?

04:01:42 10 A. No, I'm not.

04:01:44 11 Q. And reading this portion of the
04:01:46 12 document, does that refresh your recollection
01:56 13 about the effect of pH on burley impact?

04:01:56 14 MR. MURPHY: Objection as to form.
04:01:58 15 Lack of foundation. You can answer.

04:02:04 16 A. I think the only thing that it
04:02:12 17 refreshes is a logical supposition that movement
04:02:18 18 of the pH of bright tobacco to have a pH more
04:02:22 19 similar to burley would increase the probability
04:02:24 20 that that tobacco might be perceived as
04:02:26 21 directionally closer to burley.

04:02:30 22 Q. And the letters KOH, do you know what
04:02:34 23 that stands for?

04:02:36 24 A. I would assume that refers to
04:02:36 25 potassium hydroxide.

2058452064

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04:02:42 2 Q. Is that a base?

04:02:44 3 A. I believe that is a base.

04:02:48 4 Q. And does a base increase or decrease
04:02:48 5 pH level?

04:02:52 6 A. A base would be expected to increase
04:02:54 7 pH levels.

04:02:56 8 Q. And the reference to calcium oxide,
04:02:58 9 is that a base?

04:03:00 10 A. I truthfully don't know whether
04:03:02 11 calcium oxide is a base or not.

04:03:06 12 MR. MURPHY: I would just read into
04:03:06 13 the record at this point, Alex, the next
04:03:10 14 sentence, which you declined to read, which
04:03:14 15 states as follows: "Unfortunately, this cannot
04:03:18 16 be done without altering some of the other
04:03:22 17 tobacco properties, i.e. burn rate or potassium
04:03:26 18 calcium ratio, and so the overall adjustment
04:03:28 19 problem is still quite difficult."

04:03:34 20 Q. Does that last sentence that
04:03:36 21 Mr. Murphy read to you change any of your
04:03:38 22 testimony, Mr. Knudson?

04:03:40 23 MR. MURPHY: Objection as to form.
04:03:42 24 You can answer.

04:03:46 25 A. The testimony that I was giving was

2058452065

MANHATTAN REPORTING CORP.

1 Knudson - Highly Confidential - Trade Secret
04:03:52 2 the suppositions that I would draw from reading
04:03:56 3 this document at this time. It's not intended to
04:04:00 4 be reflective of any conclusions that were drawn,
04:04:02 5 because I don't necessarily recall reading the
04:04:06 6 document at any time in the past.

04:04:08 7 Q. Very well.

8 (Knudson Exhibit 7 for
9 identification, Basic flavor investigation.)

04:05:14 10 Q. You've just been handed what's been
04:05:20 11 marked Knudson Exhibit 7, which is a document
04:05:26 12 that describes a project number 2307, project
13 title, "Basic flavor investigation." This
04:05:32 14 particular report title is "Low tar/high flavor
04:05:34 15 literature review."

04:05:40 16 The Bates stamp numbers are PA 917809
04:05:46 17 to PA 917851. The corresponding Philip Morris
04:05:56 18 production numbers are 2022178773 to 2022178815.
04:06:00 19 The document appears to be written by Sherman S.
04:06:08 20 Lin, supervised by Robert Hale, Wynn Raymond and
04:06:12 21 Chris Kroustalis, and approved by Howard L.
04:06:14 22 Spielberg.

04:06:18 23 Are you familiar with the low tar --
04:06:20 24 excuse me, the basic flavor investigation project
04:06:26 25 that was conducted on or before October 1990?

2058452066

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04:06:34 2 A. I don't have any recollection of it.

04:06:34 3 Q. Have you ever seen this report you've
04:06:36 4 just been handed?

04:06:36 5 A. I don't have any recollection of
04:06:38 6 seeing this report before.

04:06:42 7 Q. Do you know who Sherman Lin is?

04:06:44 8 A. No, I can't place Sherman Lin. I
04:06:48 9 should note that this report is -- was issued
04:06:52 10 approximately one year after I left R&D.

04:07:08 11 Q. At this time of October 1990, do you
04:07:10 12 know what Howard Spielberg's title was?

:07:10 13 A. No, I don't.

04:07:22 14 Q. If you'll turn to the second page,
04:07:30 15 which is a summary, it's just one page, and I'm
04:07:30 16 going to ask you a few questions about it, so
04:07:34 17 we'll just go through it. I'm quoting.

04:07:38 18 "Smokers smoke cigarettes for the
04:07:40 19 benefits of relaxation, concentration, enjoyment
04:07:42 20 and better management capacity. In the past
04:07:44 21 decades the low tar cigarettes have gained
04:07:48 22 substantial acceptance by the smokers but not the
04:07:52 23 ultralow tar nor the lowest tar categories.

04:07:56 24 "The major problem for ultralow tar
04:07:56 25 and lowest tar cigarettes is their failure in

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MANHATTAN REPORTING CORP.

1 Knudson - Highly Confidential - Trade Secret
04:07:56 2 meeting smokers' expectation and needs. The
04:08:00 3 cigarettes are generally weaker in smoke impact
04:08:02 4 and tobacco taste and the smoke is thinner and
04:08:06 5 drier than the smoke with higher tar deliveries.

04:08:08 6 "Among the thousands of compounds
04:08:12 7 identified in cigarette smoke, the single most
04:08:14 8 abundant and important compound is nicotine.
04:08:16 9 Nicotine contributes to the smoker's
04:08:18 10 physiological as well as organoleptical
04:08:22 11 satisfaction. Nicotine in tobacco is partially
04:08:24 12 transferred directly to the smoke and partially
:08:30 13 decomposed to form amines and pyridines during
04:08:32 14 smoking.

04:08:34 15 "Nicotine and its decomposition
04:08:36 16 products all contribute to the smoke's sensory
04:08:40 17 properties, particularly the smoke impact. Their
04:08:44 18 sensory properties are influenced by the smoke pH
04:08:46 19 which determines the ratio of free and protonated
04:08:50 20 species of these compounds. Higher smoke pH
04:08:54 21 yields a harsher hence a stronger impact. Lower
04:08:58 22 smoke pH yields a smoother, hence a weaker
04:09:00 23 impact.

04:09:02 24 "However, a stronger impact does not
:09:04 25 necessarily yield a more acceptable cigarette.

2058452068

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04:09:06 2 There seems to be an optimum impact for maximum
04:09:10 3 acceptance at a given tar level."

04:09:10 4 And then it continues on.

04:09:12 5 MR. MURPHY: Why don't you read the
04:09:14 6 rest of it. It's a short summary.

04:09:16 7 MR. ROGERS: Okay. Continuing on in
04:09:18 8 that paragraph, "It appears some of the tar
04:09:20 9 components have a balancing effect on the sensory
04:09:22 10 properties of nicotine and its decomposition
04:09:24 11 products. The sensory interaction between tar
04:09:28 12 and nicotine seems to behave differently at
:09:30 13 different smoke nicotine levels.

04:09:34 14 "When the smoke nicotine/tar ratio is
04:09:40 15 at or below half of the natural range, higher tar
04:09:42 16 will yield stronger impact. But when the ratio
04:09:44 17 is at or above the natural range, higher tar will
04:09:46 18 yield a smoother and weaker impact.

04:09:48 19 "The volatile organic acids in the
04:09:52 20 smoke seem to modify the smoke pH and hence the
04:09:54 21 sensory properties. The acids can be derived
04:09:58 22 either from a direct transfer from tobacco or
04:10:00 23 from precursors present naturally in tobacco or
04:10:02 24 in added flavorings.

:10:06 25 "The Maillard reaction during curing,

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04:10:08 2 primary processing and smoking all seem to
04:10:10 3 contribute to the smoke flavor. There seems to
04:10:12 4 be a close relationship between the ratio of
04:10:16 5 total reducing sugars/total alkaloids and the
04:10:18 6 smoke's impact strength as well as
04:10:20 7 acceptability.

04:10:22 8 "Raising the smoke impact by
04:10:24 9 increasing smoke nicotine, and simultaneously,
04:10:28 10 smoothing the harshness by adding a suitable
04:10:32 11 organic acid and/or by adjusting the ratio of
04:10:36 12 total reducing sugars/total alkaloids to an
10:38 13 optimal level may be able to improve the quality
04:10:42 14 of ultralow and lowest tar cigarettes
04:10:44 15 substantially."

04:10:46 16 Q. Does that summary refresh your
04:10:52 17 recollection about efforts to improve the smoke
04:10:56 18 impact of the ultralow and lowest tar
04:10:56 19 cigarettes?

04:10:58 20 MR. MURPHY: Objection as to form.
04:11:00 21 You can answer the question.

04:11:04 22 A. No. As I said before, I'm not a
04:11:08 23 subjective expert. My involvement with the
04:11:12 24 product development and subjective side of the
11:16 25 operations when I was in R&D were at a

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04:11:24 2 superficial level, and -- so this doesn't do
04:11:26 3 anything to improve my recollection of any of
04:11:26 4 this work.

04:11:30 5 Q. Do you agree with the first sentence
04:11:32 6 of the third paragraph, "Among the thousands of
04:11:34 7 compounds identified in cigarette smoke, the
04:11:38 8 single most abundant and important compound is
04:11:40 9 nicotine"?

04:11:42 10 MR. MURPHY: Objection. You're
04:11:42 11 asking for the witness's opinion?

04:11:42 12 MR. ROGERS: Yes.

:11:54 13 A. I don't know whether either factually
04:11:58 14 or as an opinion that I would agree with either
04:12:02 15 part of that statement.

04:12:04 16 Q. Turning to the next sentence of that
04:12:06 17 paragraph, "Nicotine contributes to the smoker's
04:12:08 18 physiological as well as organoleptical
04:12:14 19 satisfaction," do you agree with that statement?

04:12:18 20 A. I don't have any basis to agree with
04:12:22 21 it. In some cases I'm not sure that I know what
04:12:26 22 "organoleptic satisfaction" means.

04:12:32 23 Q. Your answer was "in some cases." Are
04:12:34 24 there other cases where you do know what
:12:36 25 "organoleptical satisfaction" means?

2058452071

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04:12:38 2 A. No. I'm sorry. I misspoke. What I
04:12:44 3 was saying was that I really can't address the
04:12:50 4 comment because it is written at a level that I
04:12:50 5 don't understand the statement well enough to
04:12:50 6 draw any conclusions about it.

04:13:34 7 Q. Turning to the final paragraph on
04:13:36 8 this page, the first sentence, "Raising the smoke
04:13:44 9 impact by increasing smoke nicotine," do you
04:13:46 10 agree that increasing smoke nicotine will
04:13:48 11 increase the smoke impact?

04:13:50 12 MR. MURPHY: Objection. Again, these
:13:52 13 questions apparently call for the witness's
04:13:54 14 personal opinion. If that's what you want to do
04:13:56 15 with your deposition time, you're welcome to do
04:13:58 16 it, but I just think this is a completely
04:14:00 17 frivolous line of questions.

04:14:02 18 You can answer the question.

04:14:10 19 A. I don't have any reason to believe
04:14:16 20 that that -- that in any of my thinking, that
04:14:18 21 that statement makes any sense to me.

04:14:28 22 Q. Do you have any reason to believe
04:14:30 23 that it's not an accurate statement?

04:14:34 24 MR. MURPHY: Objection as to form.
:14:34 25 You can answer.

2058452072

MANHATTAN REPORTING CORP.

1 Knudson - Highly Confidential - Trade Secret
04:14:38 2 *Really*

A. I don't have any basis to draw any
04:14:38 3 conclusion.

04:14:50 4 Q. If you'll turn to page 19 of this
04:14:58 5 document, which is PA 917830.

04:14:58 6 (Witness complies.)

04:15:04 7 Q. And there's a new subheading, number
04:15:10 8 2, "PM studies on low delivery cigarettes." The
04:15:12 9 first paragraph reads, "A series of studies was
04:15:16 10 conducted in PM R&D during the period 1972 to
04:15:20 11 1976 on how to improve the impact strength of low
04:15:24 12 delivery cigarettes by raising nicotine."

:15:24 13 Are you familiar with research
04:15:30 14 conducted in PM R&D during this period?

04:15:30 15 MR. MURPHY: Objection as to form.
04:15:32 16 The document speaks for itself as to whether
04:15:36 17 research was or was not conducted. Nevertheless,
04:15:36 18 the witness can answer the question.

04:15:38 19 A. I'm not familiar with the research.

04:15:48 20 Q. Are you familiar with any efforts by
04:15:52 21 Philip Morris to raise nicotine in order to
04:15:54 22 improve impact strength of cigarettes?

04:15:58 23 A. I don't have any recollection of
04:15:58 24 that.

:16:32 25 Q. What's the relationship between pH

2058452073

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04:16:34 2 level and nicotine delivery?

04:16:36 3 MR. MURPHY: Objection. You can
04:16:38 4 answer the question.

04:16:44 5 A. I don't know that I have any
04:16:46 6 awareness of what that relationship is.

04:16:54 7 Q. Is there any effect on nicotine
04:16:58 8 delivery if you increase pH level of tobacco?

04:17:00 9 MR. MURPHY: Objection. Lack of
04:17:04 10 foundation. This is getting extremely tiresome,
04:17:04 11 Alex.

04:17:06 12 If you want to continue to ask these
:17:08 13 questions, I'm not going to instruct the witness
04:17:10 14 not to answer them, but I continue to object
04:17:14 15 based on complete lack of foundation as to any
04:17:16 16 personal knowledge or information according to
04:17:18 17 the witness's own testimony.

04:17:22 18 You can answer the question.

04:17:24 19 A. I don't have any recollection.

04:17:28 20 Q. We've seen documents today with your
04:17:30 21 name on it that refer to the expression
04:17:34 22 "impact." And these other documents also refer
04:17:38 23 to the word "impact." And I'm simply trying to
04:17:40 24 determine whether or not it's the same use of the
:17:40 25 term "impact."

2058452074

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04:17:42 2 MR. MURPHY: I object to the form of

04:17:44 3 the question. Is there a question pending?

No, it's

04:17:46 4 MR. ROGERS: It's not a question.

04:18:08 5 MR. MURPHY: I'm sorry. Do you have

04:18:10 6 a question to put to the witness, Alex, or is

04:18:12 7 that just an editorial comment?

04:18:14 8 MR. ROGERS: I don't have a question

04:18:14 9 at this time.

04:18:16 10 MR. MURPHY: Okay.

04:18:20 11 Q. Do you know who Frank Gullotta is?

04:18:22 12 A. I know the name.

:18:26 13 Q. Do you know which department he works
04:18:26 14 in at Philip Morris?

04:18:30 15 A. During my tenure in R&D, I was aware
04:18:36 16 that he was an R&D employee.

04:18:36 17 Q. Is he a scientist?

04:18:38 18 A. I believe so.

19
20 (Knudson Exhibit 8 for
identification, description of project number
21 1620.)

04:19:20 22 Q. You've just been handed what's been

04:19:22 23 marked Knudson Exhibit 8, a one-page document

04:19:26 24 Bates stamped PA 917964, Philip Morris production
04:19:30 25 number 2022201801.

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MANHATTAN REPORTING CORP.

1 Knudson - Highly Confidential - Trade Secret
04:19:34 2 It is a description of project number
04:19:40 3 1620, project title, "Electrophysiological
04:19:44 4 studies." The project leader is F. P. Gullotta.
04:19:46 5 This document is written by C. S. Hayes. The
04:19:50 6 period covered is March 1991. It appears to be a
04:19:52 7 description of "pattern reversal evoked
04:19:56 8 potentials (preps)."
04:20:00 9 Are you familiar with pattern
04:20:00 10 reversal evoked potentials?
04:20:00 11 A. No, I'm not.
04:20:02 12 Q. Have you ever heard the term?
:20:06 13 A. I suspect I may have heard the term.
04:20:08 14 I don't have any recollection as to what it
04:20:08 15 means.
04:20:12 16 Q. The objective of this project is
04:20:16 17 stated as follows: "To objectively and reliably
04:20:18 18 evaluate human responses to cigarettes." Section
04:20:22 19 B is "Results," it says, "Prep, tobacco filler pH
04:20:24 20 modifications."
04:20:28 21 "Eight cigarette models ranging in
04:20:32 22 filler pH from 4.7 to 8.8 were made and smoked
04:20:34 23 for mainstream TPM collection and evaluation by
04:20:38 24 ARD (1). Three smokings of five cigarettes each
:20:42 25 were conducted for each cigarette model. TPM for

2058452076

MANHATTAN REPORTING CORP.

1 Knudson - Highly Confidential - Trade Secret
04:20:46 2 each sample was collected on a Cambridge filter
04:20:48 3 pad backed with a cartridge containing XAD
04:20:50 4 resin.

04:20:52 5 "The analytical results revealed that
04:20:54 6 as pH increased more nicotine was trapped in the
04:20:58 7 XAD cartridge (2). These data demonstrate a
04:21:06 8 systematic relationship between increases in
04:21:06 9 filler pH and increases in gas phase (presumably
04:21:10 10 unprotonated) nicotine."

04:21:12 11 Reading this document, does that
04:21:18 12 refresh your recollection about the relationship
:21:20 13 between filler pH and nicotine?

04:21:22 14 MR. MURPHY: Objection as to form.
04:21:24 15 Again, lack of foundation as well. The witness
04:21:26 16 can answer the question.

04:21:28 17 A. No, it doesn't do anything to further
04:21:30 18 my recollection. As I pointed out, by this time
04:21:34 19 I would have been out of R&D for something on the
04:21:34 20 order of close to a year and a half.

04:21:40 21 Q. While you were at R&D between the
04:21:44 22 years of 1982 and 1989, were you involved in any
04:21:48 23 research involving the pH level of tobacco?

04:22:00 24 A. First of all, any work that my
:22:04 25 organization would have been involved in, as it

2058452077

1 Knudson - Highly Confidential - Trade Secret
04:22:10 2 related to pH, would have been centered around
04:22:14 3 either the project that we discussed some time
04:22:20 4 ago, where obviously dealing with flavor systems
04:22:24 5 to make RL more like BL, that some of the things
04:22:30 6 we were doing may well have had impacts on pH as
04:22:32 7 measured in the sheet product or in the flavor
04:22:36 8 system.

04:22:44 9 And in the ART denicotinization work,
04:22:50 10 we had done work where we had looked at process
04:22:54 11 aides, if you will, that would allow the process
04:23:00 12 to be -- to run more efficiently, to allow
:23:10 13 improvements in processing time.

04:23:12 14 But those were all -- it was all pH
04:23:16 15 work done in support of those two projects, where
04:23:26 16 the pH focus was on the pH of the fillers or
04:23:28 17 sheet materials or flavor systems that we were
04:23:28 18 dealing with.

04:23:34 19 I don't recall whether we did any
04:23:38 20 work to look at whether or not there was any
04:23:44 21 carryover of that pH work into finished product
04:23:48 22 and resultant smoke deliveries.

04:23:58 23 Q. In describing the work to make what
04:24:00 24 you say is, quote, RL more like BL, your
:24:02 25 testimony is that "some of the things we were

2058452078

1 Knudson - Highly Confidential - Trade Secret
04:24:06 2 doing may well have had impacts on pH." Are you
04:24:08 3 aware of anything in particular in that project
04:24:12 4 that had an impact on pH?

04:24:14 5 MR. MURPHY: And here we're talking
04:24:14 6 again about the Semi-Works project he testified
04:24:16 7 to previously?

04:24:16 8 MR. ROGERS: We're talking about the
04:24:20 9 project to, quote, make RL more like BL.

04:24:24 10 A. The C pilot plant experimental work.
04:24:32 11 Obviously in using either an ammonia source,
04:24:36 12 diammonium phosphate, or in using ammonia
:24:42 13 directly, the potential was to achieve a pH
04:24:42 14 change.

04:24:44 15 Q. Would that have increased the pH?

04:24:50 16 MR. MURPHY: Objection as to form.
04:24:50 17 You can answer.

04:24:50 18 A. To the best of my knowledge, since
04:24:54 19 ammonia is a basic compound, it would have
04:25:00 20 resulted in an increased pH, a movement in a
04:25:00 21 basic direction.

04:25:04 22 Q. Now, with respect to the ART
04:25:10 23 denicotinization work that you've just described,
04:25:14 24 you use the term "process aides." We had looked
:25:20 25 at process aides. What do you mean by "process

2058452079

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04:25:20 2 aides"?

04:25:26 3 A. The ART process which was based on
04:25:32 4 technology to use supercritical CO₂ to extract
04:25:38 5 nicotine from filler, we looked at ways in which
04:25:44 6 we could accelerate that process to make that
04:25:50 7 nicotine removal more efficient.

04:26:08 8 MR. ROGERS: Why don't we take a
04:26:08 9 break.

04:26:10 10 THE VIDEO OPERATOR: We're going off
04:26:12 11 the record. The time on the screen is 4:26:11.

04:26:14 12 (A recess was taken.)

:46:48 13 THE VIDEO OPERATOR: We're back on
04:46:52 14 the record. The time on the screen is 4:46:50.

04:46:54 15 Q. Mr. Knudson, do you know whether
04:47:02 16 glycerine is added to RL?

04:47:04 17 MR. MURPHY: I object to the form.
04:47:04 18 You can answer.

04:47:06 19 A. No, I don't recall.

04:47:10 20 Q. Do you know what glycerine is?

04:47:16 21 A. I'm aware that glycerine is a
04:47:20 22 compound that we use as a casing material in the
04:47:20 23 industry.

04:47:24 24 Q. At what stage in the process is it
04:47:26 25 used as a casing material?

2058452080

MANHATTAN REPORTING CORP.

1 Knudson - Highly Confidential - Trade Secret
04:47:30 2 A. To the best of my recollection, it's
04:47:38 3 used in the primaries.
04:47:40 4 Q. And by "primaries," what do you
04:47:42 5 mean?
04:47:46 6 A. Primary being that location where the
04:47:48 7 tobaccos are put together and the output from
04:47:56 8 that process is the cut filler that then goes on
04:47:58 9 to the making and packing area.
04:48:08 10 Q. What are the names of the primary
04:48:08 11 facilities?
04:48:14 12 A. The primaries are all adjoined to the
:48:18 13 make pack facilities. So there would be a
04:48:20 14 primary in each of our four cigarette making
04:48:24 15 locations. Stockton Street, the MC, both here in
04:48:30 16 Richmond; the facility in Cabarrus; and the
04:48:32 17 facility in Louisville.
04:48:34 18 Q. And DMC, is that the manufacturing
04:48:36 19 complex?
04:48:38 20 A. The MC is the manufacturing center.
04:48:40 21 Q. Manufacturing center.
04:48:42 22 MR. MURPHY: It's MC, not DMC.
04:48:46 23 MR. ROGERS: I'm sorry. The reporter
04:48:48 24 had marked DMC.
:48:50 25 Q. The glycerine that's in the casings,

2058452081

MANHATTAN REPORTING CORP.

1 Knudson - Highly Confidential - Trade Secret

04:48:54 2 do you know why it's used in casings?

04:48:56 3 A. No, I don't.

04:49:04 4 Q. And you indicated that glycerine is a
04:49:08 5 compound. Do you know what the constituencies of
04:49:08 6 glycerine are?

04:49:16 7 A. When I called it a compound, that may
04:49:20 8 be a misnomer. But no, I'm not familiar with the
04:49:24 9 detailed chemistry of glycerine.

10 (Knudson Exhibit 9 for
11 identification, memorandum from H. L. Spielberg
12 to Mr. D. Knudson, dated February 2nd, 1988.)

:50:04 13 Q. Mr. Knudson, you've just been handed
04:50:08 14 what's been marked Knudson Exhibit 9. It's a
04:50:14 15 one-page document, PA 152347, and Philip Morris
04:50:20 16 production number 2031159175. It's a memorandum
04:50:26 17 from H. L. Spielberg to Mr. D. Knudson, dated^{date}
04:50:30 18 February 2nd, 1988; subject matter, reconstituted
04:50:34 19 tobacco without glycerine.

04:50:38 20 Do you recall receiving this
04:50:38 21 document?

04:50:42 22 A. No, I don't have any recollection of
04:50:42 23 it.

04:50:46 24 Q. How did you prepare for your
:50:46 25 deposition?

2058452082

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04:50:52 2 MR. MURPHY: Objection as to form. I
04:50:58 3 think you could ask a more specific question that
04:51:00 4 would not potentially call for attorney-client
04:51:02 5 privileged communications, just to avoid any
04:51:02 6 problem.

04:51:04 7 MR. ROGERS: I don't think I've come
04:51:06 8 close to the attorney-client privilege. I'm
04:51:06 9 asking a general question, how he prepared for
04:51:08 10 the deposition today.

04:51:08 11 MR. MURPHY: Well, maybe you could
04:51:12 12 break down the question into components that
:51:16 13 would be clearly not calling for any kind of
04:51:18 14 communications between Mr. Knudson and counsel.

04:51:24 15 Q. Did you review any documents in
04:51:26 16 preparation for this deposition?

04:51:36 17 A. To my recollection, we reviewed a
04:51:38 18 very limited number of documents in preparation
04:51:38 19 for this deposition.

04:51:40 20 Q. Do you recall what those documents
04:51:42 21 were?

04:51:46 22 A. The only one in particular that I
04:51:48 23 recall, which is not to say that it was the only
04:51:54 24 document that was reviewed, but was a transcript
:51:56 25 of the ABC broadcast.

2058452083

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04:52:06 2 Q. You indicated that you reviewed a
04:52:08 3 very limited number of documents. How many would
04:52:08 4 you estimate?

04:52:12 5 A. I recall specifically reviewing that
04:52:22 6 one. In truth, we spent the vast majority of our
04:52:24 7 time in discussion without looking at documents,
04:52:28 8 or without my looking at documents.

04:52:30 9 MR. MURPHY: I'm going to object at
04:52:34 10 this point. I don't want you to testify as to
04:52:36 11 the contents or substance of any of the sessions
04:52:38 12 that we may have had to prepare for this
:52:40 13 deposition. I think the question is limited to
04:52:44 14 documents at the moment.

04:52:50 15 Q. How much time did you spend with your
04:52:52 16 lawyers in preparing for this deposition?

04:52:54 17 A. Parts of four days.

04:53:00 18 Q. And independent of documents that you
04:53:02 19 might have seen during those sessions, on your
04:53:06 20 own did you review any documents for this
04:53:06 21 deposition?

04:53:08 22 A. No, I did not.

04:53:10 23 Q. Did you speak with anybody at Philip
04:53:12 24 Morris about your deposition?

:53:24 25 A. Only to the extent of ensuring that

2058452084

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1 Knudson - Highly Confidential - Trade Secret
04:53:26 2 it was calendared, advising people that I work
04:53:28 3 with that I would be out of the office during
04:53:32 4 certain periods of time, either in preparation or
04:53:34 5 in deposition.

04:53:36 6 Q. Have you spoken with anybody at
04:53:40 7 Philip Morris who has been deposed in this case
04:53:42 8 about their deposition?

04:53:42 9 A. No, I have not.

04:53:48 10 Q. Have you had any discussions with
04:53:50 11 anybody at Philip Morris about this case?

04:53:50 12 MR. MURPHY: I object. Other than
:53:52 13 counsel?

04:53:52 14 MR. ROGERS: Other than counsel.

04:54:02 15 A. I'm sure that I've had casual what
04:54:04 16 I'll call hallway conversations with people about
04:54:16 17 the case. Early on, probably speculation of what
04:54:18 18 it might mean and who might have to become
04:54:20 19 involved in it.

04:54:24 20 Q. Let's turn back to Knudson Exhibit
04:54:34 21 9. Looking at this document that's addressed to
04:54:36 22 you, does that refresh your recollection as to
04:54:38 23 whether or not glycerine is added to
04:54:42 24 reconstituted tobacco?

:55:04 25 A. Based on reading this document, I

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MANHATTAN REPORTING CORP.

1 Knudson - Highly Confidential - Trade Secret
04:55:06 2 would presume at this point in time that
04:55:12 3 glycerine is used in reconstituted tobacco.

04:55:16 4 Q. Do you recall asking Mr. Spielberg to
04:55:18 5 run tests on reconstituted tobacco without
04:55:20 6 glycerine?

04:55:22 7 A. No, I don't have any recollection of
04:55:24 8 that.

04:55:26 9 Q. Do you know why he would have been
04:55:30 10 performing such tests in February of 1988?

04:55:32 11 A. No, I don't have any specific
04:55:34 12 recollection as to why that might have been
:55:34 13 done.

04:55:46 14 Q. If you'll look down to the second to
04:55:50 15 last paragraph, it reads, "In general, the RL
04:55:52 16 products exhibited some subjective differences,
04:55:56 17 which is to be expected. They should be
04:55:58 18 evaluated in the appropriate blend and cigarette
04:56:02 19 construction for further direction."

04:56:04 20 I apologize. The reference I believe
04:56:06 21 to RL products are the RL products without the
04:56:08 22 glycerine.

04:56:10 23 Does that refresh your recollection
04:56:16 24 about subjective differences of RL products with
:56:18 25 and without glycerine?

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04:56:18 2
04:56:20 3 MR. MURPHY: I object to the form of
04:56:22 4 the question. I think the document speaks for
itself. But you can answer the question.

04:56:28 5 A. The statement there does not refresh
04:56:30 6 my memory in any way.

04:56:52 7 Q. I asked you earlier if you recalled
04:56:54 8 asking Mr. Spielberg to run tests on
04:56:56 9 reconstituted tobacco without glycerine. Your
04:56:58 10 answer was, "No, I don't have any recollection of
04:57:02 11 that." My next question was, "Do you know why he
04:57:04 12 would have been performing such tests in February
:57:06 13 of 1988?" Your answer was, "No, I don't have any
04:57:08 14 specific recollection as to why that might have
04:57:10 15 been done."

04:57:10 16 Do you have any general recollection
04:57:14 17 as to why that might have been done?

04:57:18 18 A. Only to the extent that it would not
04:57:28 19 be abnormal for testing of any number of types to
04:57:30 20 be ongoing within a research and development
04:57:38 21 organization. Said testing could be looking at
04:57:44 22 the exclusion of, the inclusion of, or the
04:57:44 23 variation in the level of different components
04:57:48 24 used in different products to see what the either
:57:52 25 physical property or subjective changes might

2058452087

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04:57:52 2 be.

04:58:00 3 Q. And after reviewing this document, do
04:58:04 4 you recall what stage in the RL process glycerine
04:58:04 5 is added?

04:58:22 6 A. To the best of my knowledge, the
04:58:28 7 place that glycerine would be added would be with
04:58:36 8 the flavor system, hence added with the flavors
04:58:40 9 and the solubles back to the base web.

04:58:48 10 Q. Would you consider glycerine a
04:58:50 11 flavor?

04:58:58 12 A. Not being a subjective expert, I
:59:00 13 don't know whether glycerine has flavor
04:59:00 14 properties or not.

15 (Knudson Exhibit 10 for
16 identification, The Ingersoll-Rand Vari-Nip
17 Press.)

05:00:04 18 Q. You have just been handed what's been
05:00:08 19 marked Knudson Exhibit 10, which is a document on
05:00:10 20 the front of which it says, "The Ingersoll-Rand
05:00:14 21 Vari-Nip Press. The production numbers are PA
05:00:20 22 808574 to PA 808579. The corresponding Philip
05:00:26 23 Morris production numbers are 2031232714 through
05:00:30 24 2031232719.

:00:32 25 Do you know what the Ingersoll-Rand

2058452088

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05:00:34 2 Vari-Nip press is?

05:00:46 3 A. To the best of my recollection,
05:01:00 4 that's a -- either the size press used in the RL
05:01:02 5 process or an alternative piece of equipment that
05:01:04 6 could be used at that point.

05:01:16 7 Q. You're not sure whether the Vari-Nip
05:01:20 8 press is used in the RL process, or not?

05:01:36 9 A. No, I really don't know. I would
05:01:38 10 comment that obviously I have answered you
05:01:44 11 incorrectly here, as I read the first page. It
05:01:48 12 would appear that the Vari-Nip press is in
:01:54 13 fact -- has nothing to do with the resizing of
05:02:00 14 the solubles and flavor system back on the
05:02:00 15 product.

16 (Knudson Exhibit 11 for
17 identification, contents of file folder, bearing
18 Bates numbers PA 138470 to PA 1389482.)

05:03:16 19 Q. You've just been handed what's been
05:03:18 20 marked Knudson Exhibit 11, which is a document
05:03:22 21 that appears to be the contents of a file folder
05:03:28 22 that it's difficult to read the label, but I
05:03:32 23 think once I read this Bates stamp number we'll
05:03:34 24 walk through it to determine its contents.

:03:38 25 The document stretches from PA 138470

2058452089

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138471
05:03:44 2 to PA 1389482². Philip Morris numbers are
05:03:52 3 2030361786 to 2030361798. If you'll turn to the
05:03:56 4 second page of this document, which is PA 138471,
05:04:00 5 at the top of the page it says, "Line 3 press
05:04:00 6 design."
05:04:02 7 And then there's a list of
05:04:06 8 individuals. Roughly two-thirds of the way down
05:04:10 9 the list you'll see a reference to Mr. D. B.
05:04:10 10 Knudson, engineering.
05:04:14 11 And then if you turn the next page,
05:04:22 12 you'll see a memo from M. B. Mayer and D. L.
:04:26 13 Westra to those listed. The date of this memo is
05:04:28 14 May 30th, 1980. The subject is line 3 press
05:04:30 15 design.
05:04:38 16 In May 1980, what was your position
05:04:38 17 at Philip Morris?
05:04:46 18 A. That's right on the cusp of my either
05:04:48 19 being in engineering or being in purchasing
05:04:54 20 planning. The possibility is that I was still in
05:04:56 21 the engineering organization at that time.
05:05:02 22 Q. It appears from the second page of
05:05:04 23 this document that at the time the document was
05:05:08 24 written, you were in engineering. But I'm not
:05:10 25 going to pursue that any further.

2058452090

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05:05:12 2 The third paragraph of this third

05:05:16 3 page, which is a summary of the memo entitled

05:05:20 4 "Line 3 press design," reads as follows.

05:05:22 5 "Because of the increased efficiency

05:05:24 6 and operational flexibility of the Vari-Nip

05:05:28 7 press, two lines of three Vari-Nip presses should

05:05:30 8 be installed in line 3. It's also recommended

05:05:32 9 that a Vari-Nip press should be purchased and

05:05:36 10 installed in line 2 as soon as possible to

05:05:38 11 further study the impact of the Vari-Nip press on

05:05:42 12 the liquor handling system and its effect on

:05:44 13 other operational parameters."

05:05:46 14 Do you recall being involved in any

05:05:50 15 way in the line 3 press design?

05:05:52 16 A. No, I do not.

05:05:54 17 Q. Do you remember receiving this

05:05:56 18 document?

05:05:58 19 A. No, I don't have any recollection of

05:05:58 20 it.

05:06:02 21 Q. And referring specifically to that

05:06:04 22 third paragraph that I've just read, and the

05:06:08 23 reference is to the Vari-Nip press, does that

05:06:10 24 refresh your recollection as to whether or not

:06:14 25 the Vari-Nip press is used anywhere at Park 500?

2058452091

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05:06:18 2 A. No, it doesn't.

05:06:22 3 Q. If you'll turn back to Knudson
05:06:26 4 Exhibit 10, which is the description of the
05:06:32 5 Ingersoll-Rand Vari-Nip press, I'll just read the
05:06:34 6 background section on page 1.
05:06:40 7 ^{Background} "About one-half (by weight) of our

8 raw material is soluble in hot water. The raw
05:06:44 9 material also contains some nontobacco material,
05:06:46 10 primarily sand. In order to economically make a
05:06:48 11 sheet of paper from the tobacco fibers we need to
05:06:50 12 separate the fibers from most of the solubles
13 (containing sugars that would present problems in
05:06:56 14 the paper making process) and foreign material.

05:06:58 15 "We mix the dry raw material with
05:07:02 16 hot water (actually weak process liquor after
05:07:06 17 initial startups) to form a slurry. The slurry
05:07:08 18 is then squeezed in the presses causing the
05:07:14 19 liquid containing most of the solubles and
05:07:16 20 foreign material to separate from the fiber. By
05:07:16 21 getting the soluble material into a liquid we can
05:07:18 22 also remove undesirable components and add other
05:07:22 23 material such as flavorings."

05:07:24 24 MR. MURPHY: I think you should just
07:26 25 read the next sentence or two sentences as well,

2058452092

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05:07:28 2 Alex.

05:07:28 3 MR. ROGERS: Fine. That reference
05:07:32 4 you've just made, David, is to topic 2, which is
05:07:34 5 "Purpose." "The purpose of the press is to
05:07:36 6 separate the liquor containing tobacco solubles
05:07:40 7 from the tobacco fiber. This is accomplished by
05:07:46 8 'squeezing' (or 'pressing') the slurry."

05:07:48 9 MR. MURPHY: Thank you.

05:07:52 10 Q. Does this description in Knudson
05:07:58 11 Exhibit 10 accurately describe the separation of
05:08:00 12 solubles from fibers at Park 500?

:08:02 13 MR. MURPHY: I object to the form of
05:08:06 14 the question. Lack of foundation. You can
05:08:06 15 answer the question.

05:08:10 16 A. I think I've already demonstrated by
05:08:14 17 my failure to recognize the Ingersoll-Rand
05:08:16 18 Vari-Nip press and its location in the process
05:08:20 19 that I'm not sufficiently well-versed to be able
05:08:26 20 to comment on this.

05:08:28 21 I mean, I think the document -- and
05:08:34 22 whoever generated the document, you know, it is
05:08:36 23 representative of somebody's thinking, but I
05:08:38 24 can't really comment on it. I'm just not
05:08:40 25 familiar with the process or the equipment

2058452093

MANHATTAN REPORTING CORP.

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05:08:42 2 involved.

05:08:46 3 Q. Based upon your understanding of the
05:08:56 4 RL process, are dry raw materials mixed with weak
05:09:00 5 processed liquor after initial startups to form a
05:09:00 6 slurry?

05:09:06 7 A. Again, my understanding of the
05:09:12 8 process is at such a level that to understand the
05:09:16 9 difference between whether it's hot water or
05:09:20 10 whether it's weak ^{process}~~processed~~² liquors, I can't
05:09:22 11 answer the question.

05:09:24 12 There's obviously a step in the
:09:28 13 process where hot water is brought into contact
05:09:34 14 with the feedstock to create an environment from
05:09:38 15 which a separation of the tobacco solubles and
05:09:42 16 the cellulosic material could occur.

05:09:44 17 And this document appears to describe
05:09:48 18 at least one means of carrying out that
05:09:50 19 mechanical separation.

05:10:02 20 Q. If you'll turn to Knudson Exhibit 11,
05:10:04 21 to the fifth page of the document, which has
05:10:14 22 Bates stamp PA 138474, on the top of that page is
05:10:18 23 a subheading, C, "Operating conditions." And
05:10:22 24 there are then listed two separate operating
:10:24 25 conditions, and then broken up into separate

2058452094

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05:10:24 2 categories.

05:10:30 3 The condition 1 is entitled "For all
05:10:32 4 conditions." And then there's items A through
05:10:32 5 E.

05:10:36 6 "A, assume no fiber losses, therefore
05:10:40 7 pressate solubles are equal to total solids. B,
05:10:46 8 RBW used for dilution on all presses except for
05:10:50 9 Vari-Nip countercurrent operation where WEL-3 is
05:10:52 10 used for dilution of press cake from press 1-A.
05:10:58 11 Item C, RBW is assumed to be 2 percent solubles,
05:11:00 12 zero percent fiber. Item D, assume all liquor
:11:06 13 goes to cleaner feed tank (CFT) except in
05:11:10 14 countercurrent condition. Item E, all conditions
05:11:16 15 are calculated for flow to one press line only."

05:11:20 16 I'm going to turn to item B to ask
05:11:22 17 you a question. Do you see RBW?

05:11:22 18 A. Yes, I do.

05:11:24 19 Q. Do you know what that refers to?

05:11:26 20 A. I believe that's an expression used
05:11:28 21 in the factory for rich brown water.

05:11:30 22 Q. What is rich brown water?

05:11:32 23 A. I don't know.

05:11:36 24 Q. Reading item B, "RBW used for
:11:38 25 dilution on all presses except for Vari-Nip

2058452095

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1 Knudson - Highly Confidential - Trade Secret
05:11:42 2 countercurrent operation where WEL-3 is used for
05:11:46 3 dilution of press cake from press 1-A."

05:11:46 4 Does that refresh your recollection
05:11:52 5 about the Vari-Nip press?

05:11:54 6 MR. MURPHY: I object to the form of
05:11:56 7 the question. Same problem as before. The
05:11:58 8 witness can answer the question.

05:12:00 9 A. No, it doesn't.

05:12:06 10 Q. Item C is "RBW is assumed to be 2
05:12:10 11 percent solubles, zero percent fibers." Do you
05:12:14 12 have any reason to disagree with that statement?

:12:14 13 MR. MURPHY: I object to the form of
05:12:16 14 the question. Lack of foundation. The witness
05:12:18 15 may answer.

05:12:22 16 A. I don't have any basis to agree or
05:12:24 17 disagree with that characterization.

05:12:40 18 Q. Do you know what WEL-3 is?

05:12:42 19 A. No, I don't. I don't have any
05:12:42 20 recollection.

05:12:48 21 Q. Have you ever heard the term SEL?

05:12:54 22 A. Yes, I have a recollection of hearing
05:12:54 23 the term.

05:12:56 24 Q. What do you understand SEL to be?

:12:58 25 A. I don't have any recollection of what

2058452096

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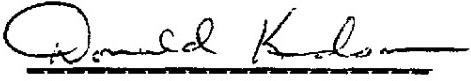
05:13:00 2 SEL stands for.

05:13:34 3 MR. MURPHY: It's now about 5:13. I
05:13:36 4 don't want to cut you off in the middle of a
05:13:38 5 document or a particular line of questions, but
05:13:40 6 if we're at a convenient breaking point, we're
05:13:44 7 just about at the end of our allotted day.

05:13:54 8 MR. ROGERS: I accept that. Let's
05:13:54 9 stop.

05:13:56 10 THE VIDEO OPERATOR: We're going off
05:14:00 11 the record. The time on the screen is 5:13:59.

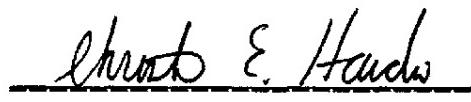
05:18:24 12 (Time noted: 5:13 p.m.)

13 
14

15 DONALD KNUDSON

16

17 Subscribed and sworn to before me
18 this 26th day of MARCH, 1998⁶.

19 
20

21 My Commission Expires 4/30/97
22

23

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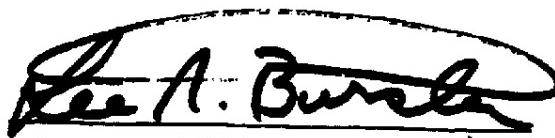
2 C E R T I F I C A T E

3 I, LEE A. BURSTEN, a Registered
4 Professional Reporter and Notary Public within
5 and for the Commonwealth of Virginia, do hereby
6 certify:

7 That DONALD KNUDSON, the witness
8 whose deposition is hereinbefore set forth, was
9 duly sworn by me and that such deposition is a
10 true record of the testimony given by the
11 witness.

12 I further certify that I am not
13 related to any of the parties to this action by
14 blood or marriage, and that I am in no way
15 interested in the outcome of this matter.

16 IN WITNESS WHEREOF, I have hereunto
17 set my hand this 14th day of July, 1995.

18
19
20 
21 LEE A. BURSTEN, R.P.R.

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2058452098

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E X H I B I T S

4

DESCRIPTION	PAGE	LINE
(Knudson Exhibit 1 for identification, Philip Morris Incorporated's answers to American Broadcasting Companies' first set of interrogatories.).....	69	20
(Knudson Exhibit 2 for identification, Line 1/2 potential quality measurements.).....	84	15
(Knudson Exhibit 3 for identification, memorandum from the quality council to all Park 500 employees.).....	101	13
(Knudson Exhibit 4 for identification, handwritten notes.).....	111	3
(Knudson Exhibit 5 for identification, meeting minutes, 11/22/83.).....	123	10
(Knudson Exhibit 6 for identification, Annual report, applied technology, 1982 -1983.).....	146	22
(Knudson Exhibit 7 for identification, Basic flavor investigation.).....	164	7
(Knudson Exhibit 8 for identification, description of project number 1620.)....	173	18
(Knudson Exhibit 9 for identification, memorandum from H. L. Spielberg to Mr. D. Knudson, dated February 2nd, 1988.)...	180	9
(Knudson Exhibit 10 for identification, The Ingersoll-Rand Vari-Nip Press.).....	186	14
(Knudson Exhibit 11 for identification, contents of file folder, bearing Bates numbers PA 138470 to PA 1389482.).....	187	15

2058452099

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